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Textile World

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Studying Textile Marketing

ONE of the specific projects undertaken thus far by the Textile Foundation is a preliminary survey of the question of the marketing of textiles. In the public announcement of this work, it was stated that the directors of the Foundation were impressed with the advisability of undertaking such a study, and with that end in view had authorized a preliminary survey intended to bring out what had already been done, and the scope that a comprehensive survey should take. It was also stated that Stuart W. Cramer had been authorized to discuss this project with the National Industrial Conference Board.

Since this news was released, we have been asked many questions regarding the nature of the study, and have also encountered some apparent apprehension as to the extent to which it might duplicate existing cooperative efforts.

Disclaiming either any first-hand knowledge of the Foundation's plans or any desire to steer its program, we are setting down our own interpretation of the purport and possibilities of such a study.

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As we visualize it, there is need for a fundamental and impartial investigation of the premises upon which the present technique of textile distribution is based. This would not duplicate the specific jobs being done by the individual branches of the industry through their institutes and associations. It would bear, roughly, the same relationship to those organizations as the U. S. Institute for Textile Research bears to the applied research bodies, on the technical end.

For years there has been increasing discussion of new trends in textile merchandising. Some of this discussion has developed from careful study. Too much of it, however, has represented hasty conclusions drawn from insufficient data or from incomplete evaluation of existing facts.

As a result, we have heard comment to the effect that the jobber has outlived his usefulness, or that, on the contrary, the swing is back toward utilization of the jobber's services. We have heard the converter characterized as the only logical intermediary under existing conditions, or as a parasite on the textile trade. We have been offered case studies which proved either the desirability, or the impossibility, of advertising a yarn or a fabric to the consumer.

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There is, of course, no one right road to follow in textile distribution. Each case must be considered on the basis of the specific circumstances affecting it. The trial-and-error method will still be necessary to some extent.

Nevertheless, it would certainly seem possible and desirable to develop landmarks which might guide the individual company in its travel through the maze. It would seem possible to study the psychology and background which led to the development of the present admittedly complicated system of textile distribution; to find out what has been done and is being done in other industries; to analyze and evaluate current trends; and to draw certain broad conclusions as to the best procedure for the future. These conclusions would then of course have to be applied by the individual to his case—and adopted, modified, or discarded.

If we are correct in our assumption that the study being considered by the Textile Foundation would develop such landmarks, the project, instead of being feared as a duplication of effort, should be welcomed as a much-needed type of endeavor.

The Week in Textiles

A.C.M.A. Meets April 23 in Augusta . . .

AMERICAN COTTON MANUFACTURERS ASSOCIATION will hold its thirty-fifth annual convention at the Bon Air-Vanderbilt Hotel, Augusta, Ga., April 23 to 25, according to announcement by W. M. McLaurine, secretary. Previously it had been planned to hold the meeting in Atlantic City in May but existing business conditions and other considerations made it advisable to change the dates and place of the convention.

N.A.C.M. Meets Jan. 30 . . .

THE BOARD OF GOVERNORS of the National Association of Cotton Manufacturers has called a special meeting of members for Friday, Jan. 30, at Boston, to consider amending the constitution and by-laws in accordance with notice given at annual meeting last October, and to vote upon the report of a joint committee of the Arkwright Club and the association, appointed to consider the advisability of combining the two groups. The committee recommends that the consolidation take place by liquidating the Arkwright Club at the close of its present fiscal year, March 31, 1931, and that the National Association take over the activities, assets, liabilities and members of the Arkwright Club. . . . . This special meeting on Jan. 30 will be held in Room L, thirteenth floor of the Boston Chamber of Commerce Building at 10 a.m. This gathering will be in place of the usual semi-annual April meeting.

"K" Mills Stir Wholesalers . . .

ADHERENCE BY jobbers to the "classified" lists of manufacturers compiled last year by the Wholesale Dry Goods Institute, was stressed by virtually every speaker at the annual convention of the Institute, which opened at Pennsylvania Hotel, New York, on Wednesday. These lists give manufacturers alphabetical designation, according to their selling policies, and the lists were acclaimed at the convention as a vital factor in protecting the business of the wholesaler. . . . . Manufacturers in class "K," who sell to all comers, regardless of whether this means parallel prices for retailers and wholesalers, were a theme of particular attention. Flint Garrison, director-general of the Institute, said the wholesaler could not continue in existence if he bought goods from class "K" mills. . . . . Speakers emphasized that adherence to the classified lists would help the "A," "B" and "C" manufacturers, who sold all or most of their goods to wholesalers, by stabilizing their position as regards competition, and F. L. Lavery, of Carson, Pirie, Scott Co., wholesalers, Chicago, added the interesting suggestion that manufacturers should also have some means of recourse when they confine their dealings to wholesalers and then find that a wholesaler is not giving them a full share of his business.

One-Woman Wool Mill . . .

A ONE-WOMAN textile industry exists in Biddeford, Me. . . . . Mrs. Ella Lunt, of Alfred Road, is probably the only woman in New England who raises sheep for wool and sells blankets she makes from the fleece. About 12 years ago she started with a flock of 10 sheep. Now she has more than 200, gets 1,000 lb. of wool each year, and sells the 150 pairs of blankets which the wool makes. . . . . Most of the blankets are taken by motor tourists and her home product has found its way in this manner into every State but one in the union.

More Education—Less Cotton . . .

CONTINUED GROWTH of the cotton cooperative marketing system in the South is dependent primarily upon the expansion of the rural school system and

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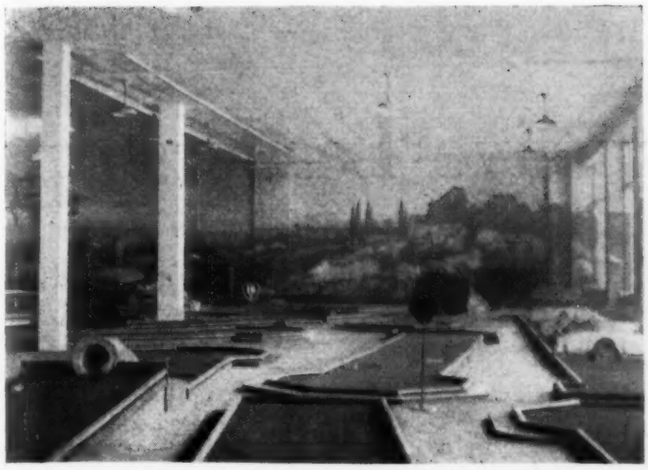
The Textile Outlook

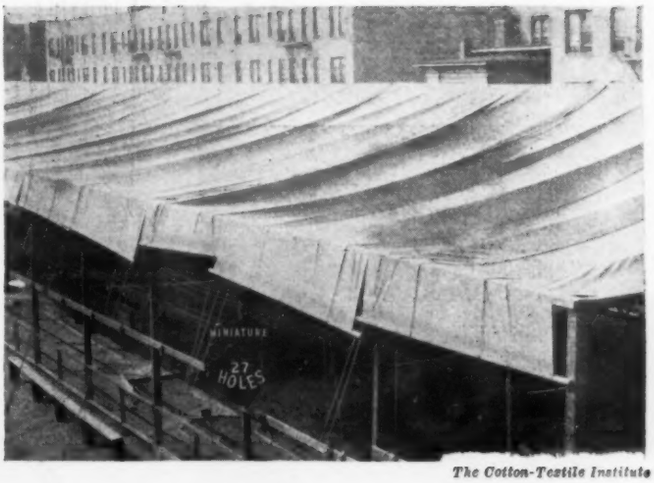
IMPROVEMENT is slow in coming into the textile field. Merchants and manufacturers should school themselves to expect gradual gains and will spare themselves considerable anguish by avoiding forcing goods on a convalescent market. No invalid can turn gourmand the day after his fever subsides. As a matter of fact his temperature is likely to go sub-normal and his diet to be carefully selected for some time. And so it is with the markets. . . Cotton goods have met a jolt in another print cloth decline initiated by over anxious sellers. It effected some sales but in general injured confidence and left market quieter than before. Wool goods, with frequent small orders, have an aspect of activity better than for several months. It is all for nearby. Fall sweaters have been priced 10-12½% below last year. Women's hosiery is weak. Silk is still strong and there is fear that the upturn in this field is being somewhat overdone.

The Business Outlook

THE ability of business to hold the line is becoming impressive, and is far more significant than its failure to make any spectacular gains. This resistance to further retreat has been evident in practically every indicator since the middle of December—in steel, coal, electric-power production; in merchandise carloadings; and particularly in building contracts. Commodity prices and stocks have likewise shown a persistently narrow range of fluctuation, and, on the positive side, the bond market has made a fairly good recovery from its slump in the last quarter of 1930. Our index of general business activity has held above the Hindenburg line of 75% of normal for six weeks, with a slight upward drift. This week it still clings close to 80% of normal. All this is the more striking because it has come without any evidence of large-scale action by central banking authoritties to check deflationary financial forces.

—The Business Week.





The Cotton-Textile Institute

Miniature Golf Courses Are Cotton Goods Consumers

Miniature-golf fans have an opportunity to keep in form during the winter months by playing under canvas. Operators of these courses in a number of cities prepared for winter by enclosing the grounds under tent-like canvas shelters which can be removed with return of warmer weather. One such course in New York City, shown above, used 3,000 yd. of canvas for protection, the canvas being laid in strips over a roof-shaped timber frame work and fastened securely with ropes at the sides of the structure. Another course in Newark, N. J., typical of those that have been moved indoors, has made extensive use of cotton wall covering, as shown above. Lightweight duck was used as it provided a clean, smooth surface particularly suitable for scenic decoration.

upon adult education in the opinion of T. B. Many, of the Bureau of Agricultural Economics, Department of Agriculture, after a recent survey. . . . . He found that 50% of the farmers who have never joined the cooperatives received less than a common or country school education. High school and college graduates, especially the latter, were found more frequently to be members.

Deadlock in English Dispute . . .

COTTON WAGES dispute in Lancashire, England, is now at deadlock. Weavers at a large number of mills are locked out and the number is increasing daily. Operatives are taking a ballot vote on question of reopening negotiations, but if this is favorable there still remains the stumbling block of claim for minimum wage, which the employers refuse.

Blanket Prices Are Low . . .

PART-WOOL BLANKET manufacturers have opened their 1931 lines. Prices are 15 to 20% lower than named last season by leading firms, and lower than one large manufacturer has ever quoted. . . . . If this reduction is passed on down the line consumers this year will save about $1 on what was formerly a $5 part-wool blanket. Blanket manufacturers are doing their bit in reducing living costs.

Hosiery Output Declines . . .

HOSIERY PRODUCTION last November showed a healthy decline compared with shipments, according to figures just issued by the Department of Commerce, and based on a survey of 267 identical establishments, representing 347 mills. Hosiery output totaled 4,342,921 dozen pairs, against net shipments during that month of 4,798,535, indicating an absorption of nearly 500,000 of the industry's surplus stocks. This production total compares with 5,131,528 dozen pairs, produced in November, 1929, against net shipments the same month of 5,389,607.

Wool Goods Do Business . . .

WOOL FABRICS markets are more active than for several months and while this is entirely in order seasonally it is giving manufacturers a brighter outlook on life in general. . . . . Men's wear duplicates are coming through in fair volume and are disappointing pessimists who predicted last month that there wouldn't be any such animal this season. Dress goods sellers, while selling on keen price basis, are booking more orders.

Russia's Cotton . . .

RECENT ADVICES from Russia indicate that the 1930 Russian crop was about 2,000,000 equivalent 478-pound bales, compared with 1,351,000 in 1929 and 1,208,000 in 1928, according to the New York Cotton Exchange Service. The large increase in production in 1930 was due primarily to a greatly enlarged acreage, in line with the industrial expansion program of the Soviet government, but it was also partly a result of favorable growing conditions. Reports from Russia state that the Soviet government will endeavor to increase the acreage further in 1931, possibly by 25%.

Print Cloths Wabble . . .

COTTON GOODS in the print cloth division, have suffered another setback. Prices have been cut $\frac{1}{8}$ to $\frac{1}{4}$c. as compared with last week. Move was unexpected as market had been slowly improving since first of the year, but a few sellers did not think it was doing all it should. . . . . Result: All sellers have met the lower price ideas and the market is not only on a more unprofitable basis for mills but demand has become less active as buyers take another reef in their confidence.

Thomas B. Hill Urges

"Aggressive Leadership"

at Silk Association Dinner

Thomas B. Hill, president, Silk Association of America, Inc., and president, C. K. Eagle & Co., New York, N. Y.

Francis H. Sisson, vice-president, Guaranty Trust Co., New York, N. Y.

A FORWARD-LOOKING viewpoint and a general feeling that silk now is definitely on the upward turn, was reflected both in speeches and table conversation at the fifty-ninth annual dinner of the Silk Association of America, Inc., held Jan. 15 at the Hotel Astor, New York City. The event brought together about 800 leading executives in the silk industry, including importers, throwsters, spinners and broadsilk manufacturers.

The principal speakers were Thomas B. Hill, president of the association and president of C. K. Eagle & Co., silk manufacturers, of New York; Francis H. Sisson, vice-president of the Guaranty Trust Co., of New York City and Sir Henry Worth Thornton, president of Canadian National Railways. The feature address from the trade point of view was that of Mr. Hill, who reviewed the developments and trends in the silk industry during 1930, analyzed the prospects for the current year and urged "aggressive leadership" in facing the problems of industrial revival.

Campaign Not Decided

Especial interest attached to Mr. Hill's references to the silk popularization drive which the Japanese industry plans to finance in this country, beginning in July, which drive, he added, had not yet been definitely decided upon.

The speaker said:

"We are all interested in the proposed educational silk campaign which, at this moment, is not assured; however, we have reason to believe through the expressions received from our Japanese confreres that the project is likely to be realized in the near future. We have assured them of our willingness to direct this campaign through the Silk Association in cooperation with their representatives. We feel, too, that other countries supplying raw silk to us will join in this campaign. No one questions the great need for such a plan."

Discussing silk prices, Mr. Hill remarked: "For a number of years raw silk prices have been trending downward, culminating in the record low price of all times in September, 1930, this condition usually resulting in unsettling trade. From all appearances, the trend is now reversed and we can at least look forward to a stabilization of raw silk prices, which in turn should contribute to a stabilization of our industry.

"However, if we are to reap the full benefits of these improving conditions, we must have confidence in ourselves and we must assert an aggressive leadership combined with an intelligent direction of our affairs.

Sisson Urges Caution

Mr. Sisson warned that the come-back of industry, including textiles, will be slow, and he dwelt at length upon the relation of China's and Japan's financial position to their silk markets. As regards American silk consumption outlook, he said:

"It seems probable that any improvement in the silk goods trade will be very gradual. There are two main reasons; first, although the clearing out of distributors' and consumers' supplies seems to have made some progress, the rate of ultimate consumption of a luxury product such as silk is highly dependent on general business conditions; second, it is doubtful whether mill activity has yet reflected the true magnitude of the decline in demand. Any confident expectation, therefore, of a large-scale recovery in consumers' demand for silk should be held only in connection with a fairly long-term look into the future."

Sir Henry Thornton reviewed international relations in their effect upon business and made a plea for better understanding between industries in different countries as a step toward international amity.

Europe Makes Progress in Compiling Rayon Output Data

DEFINITE attempts are now being made in Europe to put the statistical information regarding the rayon industry on a satisfactory basis. A meeting of the Consultative Committee of Experts for the Rayon (Artificial Silk) Industry, under leadership of Abraham Frowein of the Glanzstoff and Bemberg Companies was held recently in Paris. While this was in the nature of a preliminary talk, some important progress along general lines was made. The Committee had to consider existing national statistics in the various countries and the provisions of the rayon section of the draft framework for a uniform customs nomenclature drawn up by the Sub-Committee of the League of Nations. Finally, after an exchange of views, the rayon experts agreed upon a program of principles which it is believed will do much to facilitate the task in hand.

So far as production data is concerned, the chief obstacle lies in the fact that certain countries refuse to disclose details and as a result unofficial estimates have to be made. Britain, Italy and Japan are the only important foreign countries which publish official data on production; for that reason, it is not feasible to give world production without providing a certain margin for estimates. In Belgium there exists a "Groupement de la Soie Artificielle" but this body steadfastly refuses to give production details, though the individual companies in some cases adopt a more open attitude regarding the matter. The Czecho-Slovakian companies until recently were prone to give details of production, but their association does not agree with this policy and now only estimates can be obtained. The utmost difficulty is met with in France, and in Germany an even greater reticence is observed. The same applies to Holland, while Switzerland follows a more open policy and data are available.

The estimates which have been prepared for the first nine months of 1930 indicate a serious world overproduction and it does not seem too much to expect that producers faced with this warning will relax a little and provide better information with the object of saving the industry in general from the pitfalls which beset any business lacking reliable statistical data. It can be understood that individual producers may not be willing to disclose their output and sales but even allowing for this, it does not seem that there should be any reasonable objection to the collection of the data by some central authority bound to secrecy, as was projected by American firms through the Rayon & Synthetic Yarn Association. Such a system might easily be worked through the government or the leading banks.

It is not, however, merely a question of the weight produced, for before any really understandable data can be obtained there must be differentiation firstly as to processes, then as to deniers, and following that a subdivision into filaments and deniers. If this information were available for both production and sales, the industry would be enabled to prevent a recurrence of the serious depression which now holds in almost every country.

Regarding import and export statistics, the first trouble is that there are still certain countries which class silk and rayon together and even where the full international nomenclature is used, there is a great temptation for silk to slip into the rayon class or vice versa. This, of course, completely upsets all calculations. Moreover, where—and happily this is now the case in all important countries—there is a differentiation between the two fibers, there still remains the hopelessly inadequate system of sub-classification. With the exception of Germany there are few countries which give any information regarding the deniers imported. But perhaps the most serious feature is that in some countries tare is not allowed for and in others it is. This accounts for a variation in statistics amounting to well over 20%. One of the first moves of any international body should be to eliminate this variation in method of presentation.

The export returns for Czecho-Slovakia are most unsatisfactory and the same remarks apply in the case of Poland. French returns are lacking in essential detail and leave a large proportion assigned to an unknown group of "other countries." The Hungarian returns are complicated by a large traffic in yarns for processing and as the countries of origin are not known, the student is somewhat bewildered. Japanese figures are unofficially obtained but a margin for error must be allowed. The United States export returns are obtainable, but the large re-export trade to unknown destinations causes complications. There are no statistics available regarding exports from Brazil, and in Canada, the authorities will not disclose details owing to the fact that there are only two producing companies in the country. Spanish export returns are only obtainable irregularly and little information can be obtained regarding exports from Sweden.

Progress is Steady

Despite all these difficulties the problem of the presentation of data for the industry is being solved. Each month some difficulty is overcome and another step forward is made. The achievement of the Consultative Committee in reaching a common declaration of principles is encouraging and significant. The points covered in this declaration follow:

1. The trade statistics of each country should be established in such a manner as to be comparable with those of other countries.

The country of origin will be either the producing country where the goods have been nationalized in the meantime by the payment of import duties, or if none such exist, by an import declaration. The country of destination will be the country to which the goods are dispatched with import declaration.

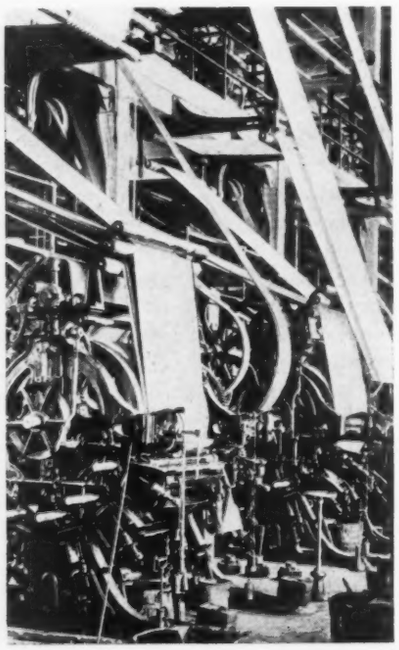
Statistics should:

A. All be drawn up on the basis of the *same classification* for the various articles. This can only be

(Continued on page 27)

Printing of Fast-Color Rayon Crepes

Requires Careful Attention To Details



By Harold B. Sturtevant

FABRICS which have become very popular during the last year or so are printed rayon crepes. These fabrics are printed with fast colors in a large variety of patterns and shades on both white and colored grounds. A description of the methods used in the preparation, dyeing, printing, and finishing of fast-color rayon crepes gives an idea of the number of processes involved and the extreme care and vigilance necessary in the handling of this type of fabric to obtain the results required.

Rayon crepe is received at the finishing plant in cases, each piece being rolled on a board or a tube with a ticket attached which shows the number of yards in the piece. Since rayon crepe is a comparatively expensive cloth, and the process it goes through produces a shrinkage in length, a check of the yards and an examination of the pieces are made. The work sheet and print order as shown in Figs. 1 and 2, are consulted, and the pieces are laid out by yardage and marked with an indestructible ink with the following identifying marks on each end of the pieces: (1) Lot No.; (2) Yards in the piece; (3) Combination No.; and (4) Ground Shade. Each shade is kept separate, and the cloth is sent to the dyehouse for processing.

Preparation for Printing

Several types of machines are employed for preparing and dyeing rayon fabrics, but for rayon crepes the reel dyeing machine has come into most common use. By arranging several of these machines properly many of the processes can be made continuous, but for the sake of clearness this description will be described as taking place in one machine. The foreman by consulting his work sheet finds that the order calls for 750 yd. of Combination A to be dyed a blue ground.

The reel machine is half filled with cold water, and the 750-yd. lot of goods is threaded up in the usual manner. This batch is then successively treated with a desizing compound; a scour consisting of a small percentage of caustic soda, soap, and an emulsifying agent; and a warm-water wash. Parts of the lot, where the order calls for a white or a light ground shade, require further additional treatment with a bleaching solution (generally sodium hypochlorite); an antichlor; and another warm-water wash. Rayon fabrics often are woven with bleached yarns, and in this case the bleaching operation can be omitted, the scouring being sufficient to remove the light yellow color resulting from the oils used in the spinning, warp sizing, and weaving operations.

Naphthol colors, which discharge with hydrosulfite and which have been tested in the laboratory for fastness to sunlight and washing, are used in dyeing. The instructions for dyeing as given by the dyestuff manufacturers for jig dyeing can be easily adapted for reel dyeing; and by careful observation, what few troubles occur can be readily corrected. The range of naphthol colors is not complete, so there will be some shades impossible to produce. However, new colors are continually being brought out by the dyestuff manufacturers, and we should soon have a complete range.

After dyeing has been completed, the batch should be washed with warm water and then with cold to remove the last traces of loose color. If the wash is not thorough, it will be necessary to use an excessive amount of hydrosulfite to strip the ground shade in printing and the white discharges may be stained. The pieces are then taken from the machine, put into nets or bundled in clean cloths, and hydro-extracted. On some grades, where the printed colors do not penetrate well, it is advisable to add 10 to 20 lb. of a good grade of sulfonated oil to the last rinse water. The extractor should not be loaded too heavily, and the goods should not be extracted too dry, especially if sulfonated oil has been used in the last rinse.

Precautions in Drying

The bundles are then taken to a loop or apron dryer, the end of each piece is knotted to the one on the dryer, and the goods are opened carefully by hand from a turning box as they pass into the dryer. At the delivery end of the machine the goods are put into a box, and the knotted ends laid over the side of the box and sewed. While the cloth is being sewed, it should be stretched

fairly tight or a little wider than the finished width as shown on the work sheet.

The cloth is then framed on a 60-ft. silk tenter frame under which there are four steam sprays and also four sets of gas burners to dry out the moisture taken up by the cloth from the steam. These combined operations of steaming, stretching, and drying produce an even width throughout the entire length of the cloth. The frame width is set so that the cloth as it is batched on the roll at the delivery end of the frame will be about 1 in. wider than the final finished width. Sometimes an additional run over the frame will be necessary to make the salvages even and free of mis-clips. The goods are now marked with a ticket bearing information similar to the gray markings and then are sent to the printing department.

Printing With Vat Colors

Printing of crepes with vat colors is done on a regular printing machine in the same general way as that used for cotton goods. To insure satisfactory work, there are certain precautions which must be taken. As much tension as possible should be eliminated. The amount of caustic soda in the color should be reduced as much as possible and still be consistent with good results. The heat used in drying should be reduced so that the printed color is just dry and no over-heating or baking of the rayon takes place.

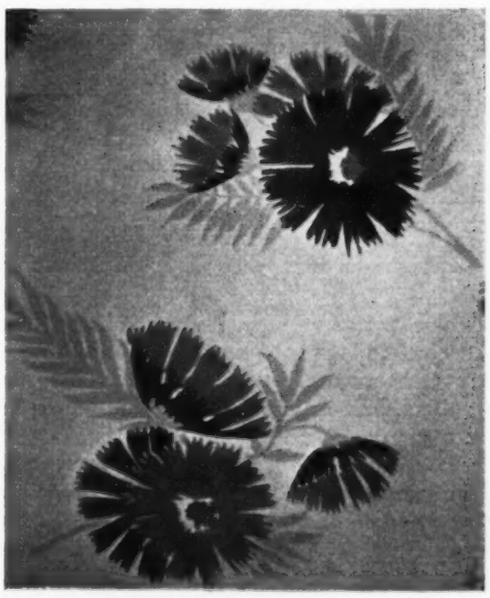
In printing with vat colors a continuous rubber blanket is used under the back-grays in place of a woolen blanket, because the color paste contains caustic soda which would destroy the wool. The back-grays employed should be of a fairly good grade of cotton sheeting, woven especially for the purpose and with as few seams as possible. It is customary to use the grays as many times as possible. When they collect too much color, they are washed and dried through a continuous open soaper and a set of dry cans, usually in tandem. The grays are then batched on rolls and are ready for use again.

The printing paste for vat colors can be made from a good grade of British gum, using potassium carbonate as the alkaline thickening agent. the correct proportions being taken to produce a paste of the required consistency when it is cold. Formaldehyde-hydrosulfite, caustic soda, an oil to help the penetration, and the required proportions of strained color are added to the paste. It is then carefully mixed and double strained to remove all grit and lumps. The amounts of caustic soda and hydrosulfite will vary depending upon the colors selected to produce the shade wanted. The thioindigo colors require but little, and the anthraquinone series larger amounts.

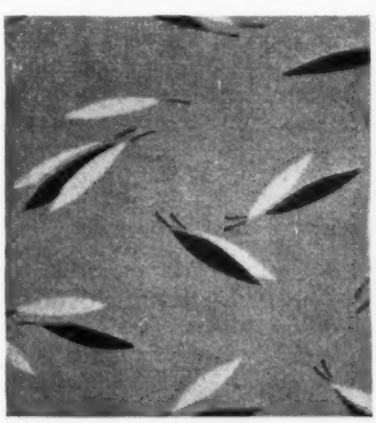
Most printing machines are equipped with a set of cans to dry the cloth and the back-grays. By reducing the steam pressure on the cans that dry the printed cloth or by re-threading the cloth so that only part of the cans are used, ordinary cans will be fairly satisfactory for rayon work. A drying chamber, in which the cloth passes over a series of rollers in a heated compartment, is preferable, however, because the uniformity of the heat can be better controlled during the drying.

Cloth entering the printing machine should not be put over the scrimp bar. The back-tender should watch it carefully and keep it free of wrinkles and tension. Since many of the patterns now popular contain three or four colors, it is advisable to run the crepe on the smaller six- or eight-color machines. The printed goods leave the machine and pass directly to the dryer where they are dried, plaited loosely in a box, and sent to the ager for steaming.

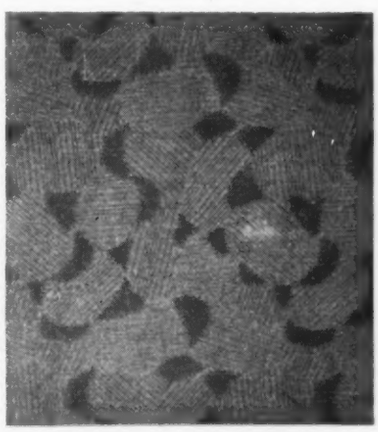
For the proper ageing of vat colors it is necessary to have a certain amount of moisture, a temperature of about 214° to 216° F., no air, and a time of two to three minutes. To produce these conditions, an ager



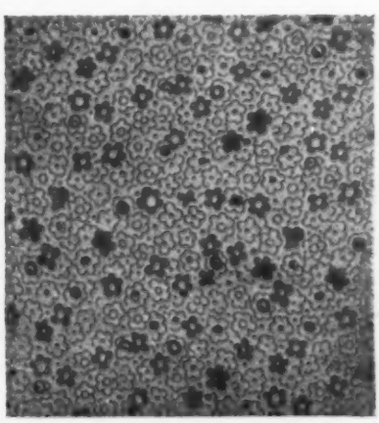
Cotton and rayon crepe printed on white ground



All rayon crepe discharge printed



Rayon crepe printed with fast colors



Cotton and rayon discharge printed

WORK SHEET

Customer_____ Lot No._____

Date_____ Pattern No._____ Yards_____

Cloth_____ Count_____ Grey Width_____

Invoice Rec'd._____ Grey Goods Rec'd._ Fin. Width_____

Bale Mark	Bale No.	Weight	Yards	Finishing Instructions
				Print Order

Fig. 1. Department heads receive a work sheet which gives finishing instructions for each lot of goods

PRINT ORDER

Customer_____ Lot No._____

Date_____ Pattern No._____ Yards_____

Ground Shade	White	Blue	Green	Brown			
Combination A	1000	750	1000	1000			
B	1000	1050	1000	1000			
C	1000	1200	1000	1000			
D	1000	900	1000	1000			
E	1000	1100	1000	1000			

Fig. 2. The print order furnishes detailed information regarding ground shades and combinations

for vat-color prints is equipped with a variable-speed control, closed coils heated with live steam to obtain the necessary temperature, open water troughs under the bottom rollers, and an open steam pipe which feeds directly into the machine.

To help control and maintain the correct moisture content and temperature, the steam line is connected to the high-pressure steam for volume and heat, and to the low-pressure line for moist steam. In order to exclude all air, a good head of steam should always be coming out of the opening where the cloth enters and leaves the machine. It is important to have an experienced operator on the ager who knows when the steam is doing its work properly and who can immediately correct any unsatisfactory condition. Aside from these details, ageing is performed in the same way as that used in the ageing of printed cotton piece goods except that the tension should be reduced as much as possible.

After ageing it is not advisable to have the goods remain standing more than an hour or so, because they are liable to generate heat which will destroy the colors. It is preferable to follow immediately with the oxidizing and soaping operations.

Oxidizing and Soaping

For the following reasons it usually is impossible to use the regular type of open soaper for the oxidizing and soaping of rayon crepes: (1) Rayon loses about 50% of its strength when it is wet; (2) a crease in the cloth when it passes through a nip that has an average set on the rolls is apt to cut the threads or leave a crease that will show in the finished piece; (3) a crepe should not have any more tension on it than is necessary, and most open-width soapers are built with a slight take-up between each section and (4) the usual machine is not in good enough mechanical condition to successfully handle delicate fabrics.

Type of Soaper to Be Used

The color must be oxidized and most of the excess dyestuff washed off before the wet cloth can be put in a box or the print allowed to come in contact with other parts of the cloth; otherwise mark-offs will occur. Therefore it is advisable to run the fabric through a four-box, open-width, ball-bearing soaper, with a solution of sodium perborate in the first two boxes and the usual soap solution in the third and fourth. Just enough tension should be carried on the cloth to keep it running straight and to permit the expanding mechanism before each nip to do its work properly. The machine should be run with the top roll of the squeezers raised, except the one on the last box which is set as lightly as possible. There should be no tension take-up between boxes. The goods should be plaited loosely in a box at the end of the soaper and washed immediately in a continuous slack-rope washer without nip rolls. In most cases, one warm-water wash will be enough to remove all the soap solution remaining in the goods, but it is better to examine the print and the ground to determine if another wash is necessary. In the slack-washing and crepe-drying operations, any loss of crepe that occurs during the processing up to this point will return to the goods unless the tension at some time was too great and the crepe lost entirely.

On some grades of rayon crepes which are soft enough and do not require much finishing oil the following procedure might be advisable to reduce the number of finishing operations: The last compartment in the slack washer should be water-tight; and in place of warm water for washing, a solution of the finishing materials is put in this section. By means of a continuous feed from a mixing tank, the strength of the solution is kept fairly uniform. A run through a washer equipped this way combines the washing and softening operations. This is followed by hydro-extracting and crepe drying, observing the same precautions that were used after dyeing. The cloth is now ready for the actual finishing operations.

Finishing Demands Care

If the cloth has not been previously treated with the finishing oils and the other materials used for the purpose of obtaining the desired softness and hand, it should be run through a quetch, the box of which contains a solution of these materials. The next operation is the setting of the crepe by running the cloth over the silk tenter frame. There are several important factors which require special attention during this particular operation.

such as correct width, warp tension, crepeing, and careful control of the steam and the heat under the frame.

The tension on the fabric before entering the tenter frame must be watched carefully and adjusted as found necessary to produce the correct percentage of warp shrinkage called for by the work sheet. For example, the 750 yd. of gray cloth that was dyed a blue ground should be stretched in the length when run over the silk frame so that the final yardage will be 660 yd. It is almost impossible to obtain the correct yardage in one run over the frame, but by getting the first run as nearly right as possible, it is a great deal easier to get the exact yardage on the second run. The percentage of filling crepe is determined by the owner, who, knowing the gray width when he purchases the goods, specifies the finished width.

As a rule the tenter frame should be set at such a width that the goods on the batching roll at the delivery end of the frame will be the correct finished width as called for on the work sheet. If, however, the cloth requires further finishing operations after framing, the proper allowances must be made for them in reference to the width. For example, if the finish requires a run over the Palmer finishing machine, the width of the cloth should be less as it comes off the tenter frame. Again, if the cloth is to be calendered, it will be necessary to obtain a width about 1 in. over the finished width to allow for a loss due to the tension on the warp during the calendering operation.

The simplest way to finish rayon crepe is to give it two runs over the tenter. We find however that most rayon crepes require further operations to reproduce the hand, luster, and feel of the standard reference sample. Frequently the cloth is given a run over the Palmer finishing machine instead of the second run over the tenter frame. This operation increases the luster and softness and imparts to the goods a finish and hand more silk-like than can be produced otherwise. A run over a silk calender increases the softness and luster, the exact finish depending on the particular method by which the cloth was run and how much heat, if any, was used on the steel bowl of the calender.

These are the three major operations which the finisher has at his command to reproduce the finish called for by the customer's standard. Knowing what these operations will do, the foreman should examine the cloth received from the dryer to determine what his method of procedure will be. He will add the softening materials at the quetch and follow with the necessary mechanical operations.

Examination and Put-Up

The finished cloth on rolls is sent to the put-up department where it is run slowly over an inspecting board. All imperfections in the dyeing, printing, or weaving and any spots, stains, or damages are properly marked or cut out.

Two samples should be taken—one to be used for a reference; and the other for testing the percentage of crepe, the fastness of the color, the measurement of the width, and the correctness of the finish.

When everything is found satisfactory, the cloth is put up as ordered by the owner of the goods. Rayon crepes can be put up for the trade in a number of ways, the best method being to roll it on tubes at the full width in pieces from 20 to 40 yd. in length. Each roll is marked with a hanging ticket which shows the color, the yards, the pattern, etc. The rolls, wrapped in paper and made attractive in appearance, are packed in cases; an invoice taken; and the cases shipped as ordered.

European Progress in Compiling Rayon Output Data

(Continued from page 23)

done if all countries accept the same customs nomenclature, and base their statistics upon this nomenclature.

B. All give the *net-net weight* (invoiced weight) of the goods without any addition for packing or for the apparatus on which the goods are presented.

C. All give the *market value* of the goods corresponding to the price invoiced.

D. Separate goods *admitted temporarily* from goods sold in ordinary special trade.

E. Never give the country of mere transit as the country of origin or destination.

2. The committee of experts desires that these statistics be *published every month* by all countries and that such publications be kept constantly up to date. These monthly publications should contain all the details mentioned under Par. 1.

3. *Statistics of Production* should be established according to the same classification and the same principles as regards weight, as the trade statistics, so that the two kinds may be comparable.

4. In accordance with a proposal from the British group, the committee of experts asks that statistics of stocks in bonded warehouses be established.

5. The committee of experts notes that the draft framework for a customs nomenclature prepared by the Sub-Committee of Experts of the League of Nations meets the following essential requirements of the rayon industry:

A. Separation of rayon from natural silk, as regards both yarn and fabrics.

B. Separation of rayon yarn properly so called from horsehair and strips, and also waste and yarn from waste.

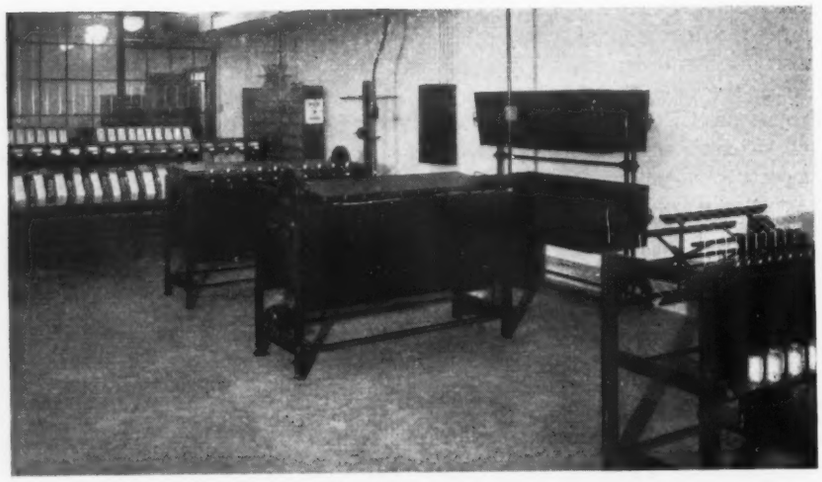
The committee of experts recommended the acceptance of the nomenclature proposed by the sub-committee of experts of the League of Nations by the national committees of the International Chamber and requested those committees, which have counter-proposals to make, to formulate them definitely as soon as possible and in any case not later than Dec. 1, 1930.

The committee of experts desired the Sub-Committee of Experts of the League of Nations to consider the question of mixed textiles and lay down for such textiles uniform allowances for all countries.

Finally, the committee of experts requested the International Chamber of Commerce to take immediately all measures necessary to secure the separation of rayon from natural silk in all statistics where this has not yet been done.

New Quarters for Chicago Testing House

a Boon to Silk Trade



A corner of the winding room showing, besides other machines, scriplanes and sizing machines

A bank of conditioning ovens, boil-off kettles and chemical laboratory

THE Chicago Testing House, first set up in 1926, is now located in the Merchandise Mart. It is equipped with the most modern apparatus for meeting the requirements of mills purchasing silk and rayon and organizations dealing in textiles. Until these facilities were established western manufacturers were confronted with the necessity of shipping their raw silk across the country twice, with freight expense which was too great for a highly competitive product to bear.

Since the inauguration of the National Raw Silk Exchange an increased tendency to view raw silk as a commodity has been evident. Trading in certificated raw silk has been possible for some time through the inspection bureau of the exchange, but as inspection for certification by the Exchange was done at Hoboken the convenience of the Chicago Testing House for western mills, which purchased raw silk through the Exchange, was somewhat nullified.

Through the recent merger of the testing facilities of the United States Testing Co. and the National Raw Silk Exchange, the Chicago Testing House is now not only the official testing house of the Silk Association of America, but also official inspector for the National Raw Silk Exchange. The certification and storage of raw silk in accordance with the rules and regulations promulgated by the Committee on Grading and Warehousing, of the Exchange, is now available to its members located in the Middle West.

The Chicago Testing House has extensive space on the eleventh floor of the Merchandise Mart where are installed modern testing equipment and inspection facilities. Considerable storage space is also available. The entire space is covered by sprinkler system; the walls are of brick and tile and, consequently, fire proof. Doors and windows are protected by the American District Telegraph Service; and watchmen in the corridors reduce the burglary hazard to a minimum.

Railroad facilities in the Merchandise Mart enable Western roads to switch cars of silk directly to the building where they are unloaded under cover without danger of robbery. Elevators adjacent bring the silk direct to the storage space without further handling. Shipments can be routed direct to the United States Testing Co. and stored or tested during a period of 12 months or less and re-forwarded to any point East without additional freight charges. The manufacturer buying on letter of credit, who has found it necessary to pay cartage and freight charges on shipments consigned to him out of New York, can realize a considerable saving. By stipulating the Chicago Testing House in the bill of lading, the silk is received, tested and shipped directly to the mill if satisfactory. If inspection proves the silk is of a lower grade, it can be forwarded to the New York agent of the seller without additional cost. The saving of time also warrants careful consideration as all raw silk is handled out of Chicago by fast baggage car service directly to destination.

Tag System for Circular-Hosiery Mills

By John Russell

IN THE knitting trade successful operation depends more often than not upon close control of a mass of detail. Unfortunately, in most attempts to lower the smaller costs of production, the cure develops into a more expensive matter than the ailment. That is to say, systems developed to care for smaller items of production often become too involved for use.

This danger lurks in any system established by a hosiery mill for holding costs for needles, transfer points, and machine parts to a minimum. When it is considered that each machine has several hundred needles and points, it will be readily understood that such a system has a fine chance, unless properly handled, of becoming very detailed and highly useless.

The mill whose system we are to describe has its machines divided into sections, and these sections in turn are divided into lines. Some one machine fixer is made responsible for a certain section of these machines, and it is up to him to keep them in running order. Likewise this section, divided into lines of machines, is in the hands of some group of knitters who are responsible for keeping the machines supplied with yarn and assuming the usual duties of a knitter. This is in accordance with present practice, and it is at this point that this mill begins to apply its system.

To the yarn bracket of each machine is attached a small tag, which is blank on both sides. There is also a form tag, both sides of which are lined off so as to accommodate the desired data which will be placed there later. This last-mentioned tag is a large one and hangs at the end of each line of machines in a section. Front and back views of this tag are shown herewith. It will be noted that it has spaces for the names of both the day and the night knitters and for their production in waste, thirds, seconds, and firsts for each day over the period of pay. There are also places for the line and section numbers and for the fixer's name.

Front and back of tag to be hung at the end of a line of circular-hosiery machines

The system works as follows: The fixer replacing broken needles in a machine tallies the number on the small tag. If he is replacing broken transfer points, he tallies the number on the reverse side of this tag. At the end of the day the knitter is credited on his line card with the work he has done. At the end of the pay period the cards are gathered together and tabulated. The tally marks of the machine tags are counted and the needles used for the line and section are accounted for. The transfer points used are accounted for by the number tallying on the reverse side of the tag. The line tickets are totalled and the knitter is paid for his production during the period of pay. The line-ticket total is a check against the total from the knitting-room foreman's daily report. The number of needles, transfer points, and parts is now known; and it only remains that the proper steps be taken to reduce this number.

So far this looking for needles has entailed too much red tape and the results so far mentioned are not worth the effort made in getting them together. By keeping in mind, however, the relation of needles to production and the relative unimportance of needle costs to production cost, it will be found that this system has decided value. The percentage of good work done by the knitters can be calculated and the cards hung again at the ends of the lines. In this way each individual knitter can judge his standard of excellence as compared with other knitters. The needles and transfer points used by the fixers in relation to the total dozens made on their sections also give a figure upon which the fixers can be judged as to their relative merits. The line cards are left hanging for one period of pay after their results have been tabulated and are then filed away in the office.

As to the individual small tags on each machine, the fixers have found that their machines are like people in that some are apt to be more temperamental than others. With the help of the tags the fixers are able to attend to the troublesome machines much sooner than otherwise, and are therefore able to reduce the amount of waste and bad work. These tags are of course destroyed at the end of each pay period and new ones substituted.

This system plays no favorites and awards merit with absolute impartiality. If a knitter is surpassed by another knitter the system shows whether the fault lies in carelessness or lack of experience on the part of the knitter or whether the fixer is not as efficient as he should be. The line tag covering the *(continued on page 65)*

Progressive Purchasing Agent Realizes He Has

Dollars to Sell

By Ralph C. Maultsby

Southern Editor, TEXTILE WORLD

HEEDING the old adage that "a dollar saved is a dollar earned," many textile executives have evidenced further determination to place their purchasing activities on a more efficient basis. The observation of sales representatives in close touch with textile mills has been that more manufacturers are exercising greater care in placing their orders—not only in the matter of price, but also in specifying quantities desired.

The majority of textile mills no longer buy ordinary supplies in the haphazard manner commonly practiced when red ink was virtually unknown in their accounting departments. Today science has entered the picture. Many of the larger mills have experienced men who devote their entire time to the business of economical purchasing, while there are several groups of smaller mills which maintain central buying offices in charge of capable purchasing agents. Efficient methods of inventory control, including accurate stock records, now serve as guide-posts to their purchases.

The recent tendency has been for textile mills to establish detailed specifications for the products they regularly purchase. We find that sizing compounds are required to measure up to exacting standards and that variations only within certain limits will be tolerated. One plant's specifications for sizing compound, for instance, shows the percentage of moisture, solvent, fatty acids, free fatty acids (if any), combined alkali as sodium oxide, free alkali (if any), and starch, that will be accepted. It is an easy matter to determine by chemical analysis if shipments satisfy such specifications.

Advantages of Scientific Purchasing

The distinct advantages of scientific purchasing are revealed in the improved quality of the finished fabric and in the lower per unit cost of items regularly entering into manufacturing operations. Many times it has been found that the standardization of materials going directly into mill processes has eliminated the causes of variation in the finished product.

If the purchasing department is functioning efficiently it is often able to eliminate much unnecessary sales effort on the part of concerns selling to the textile mill. When the purchasing agent has adequate information concerning the type, size, and quantity of any desired item, he can immediately tap existing sources of supply; while, on the other hand, if the price demanded by an established producer of the item is considered excessive, the purchasing agent may bargain with another advantageously situated concern to manufacture the article. Thousands of dollars have been saved by textile mills in this way, and at the same time new markets have been presented to concerns manufacturing chemicals, oils, and many other products consumed in the textile industries.

The progressive purchasing agent has found it profitable to adopt the selling point of view. In other words, he is capitalizing on the fact that he has dollars "to sell" for the other man's goods, whether they be brooms, spindle oil, loom motors, or what not. His object, therefore, is to make *his* dollar as attractive as possible to the other party. This can be accomplished in several ways.

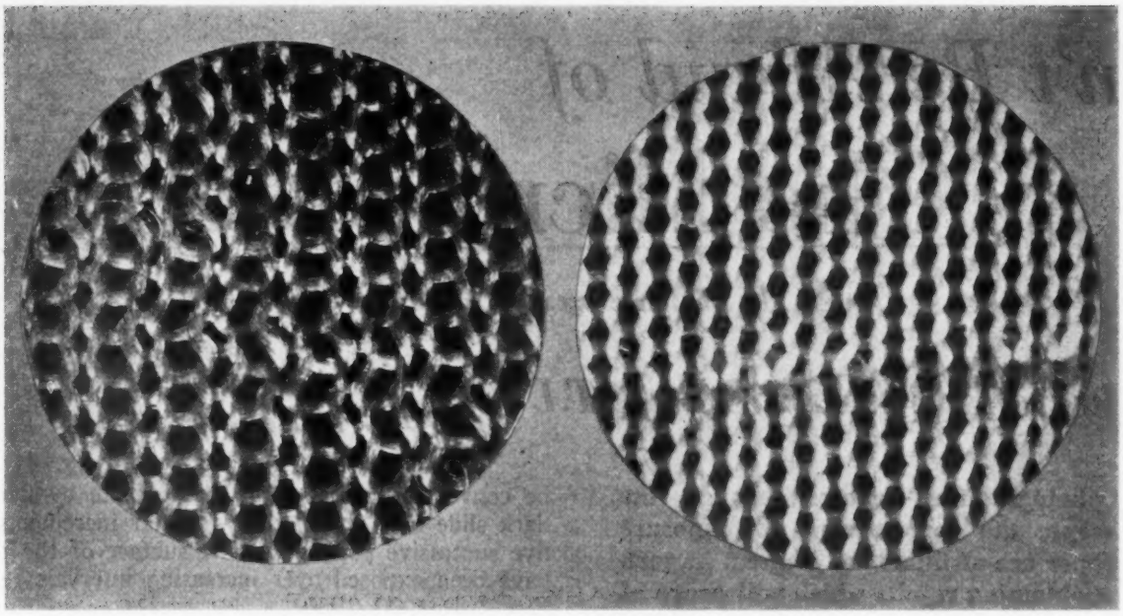
In the first place, the purchasing agent frequently can offer substantially large orders which entail practically no sales expense for the seller. The quantity involved in contracts placed by a purchasing department naturally will command an extra discount that is virtually a share of the economy resulting from an elimination of the customary sales expenses.

"The progressive purchasing agent has found it profitable to adopt the selling point of view. In other words, he is capitalizing on the fact that he has dollars "to sell" for the other man's goods, whether they be brooms, spindle oil, loom motors or what-not. His object, therefore, should be to make *his* dollar as attractive as he possibly can to the other party."

Enhancing His Dollar

Again, the purchasing agent may enhance the lure of his dollar by assuring the seller that his commodity will be purchased steadily—that is, as long as quality and price are mutually satisfactory. It is evident, therefore, that a thorough knowledge of the items to be purchased, the sources where these items may be obtained in adequate quantities, and abundant common sense are three essential qualifications for a purchasing agent who wishes to become successful.

Expert diplomacy is often required in conducting buying transactions, and it is clearly evident that the purchasing agent should have a capacity for ready analysis and sound interpretation. The purchasing agent must necessarily be well informed as to ordinary buying practices and particularly concerning new developments in all lines affecting the manufacture of his company's product.



Pulled threads in redyed goods may be caused by the hosiery coming in contact with a rough surface of the dyeing machine

Bruises and creases are found in fabric which have been run too long in the dyeing machine or which have been extracted too dry

Hosiery Redyeing Made Easier

By Herbert C. Roberts

A PROMINENT hosiery dyer once said that the hardest part of hosiery dyeing is the redyeing. Certain it is that to turn out redyes so that they will give no indication of having been reprocessed, calls for all the skill the dyer has at his command.

It matters little what the reason for redyeing—whether it be that the shade is too dark or fashion decrees that the goods in stock are no longer a popular shade—the dyer must remove the color and substitute for it another. This must be done with no damage to the merchandise, and the dyer must turn out the redyes in such condition that the discriminating buyer will never know how long the hosiery has been in the dyehouse. The picot edge and the other colored threads and clocks must not look washed out or faded. The color must not run into the stocking. The filaments must not be broken, the yarn bruised, or the loop formation disturbed. Above all, the stocking must not be fuzzy.

Use of Pine Oil

Stripping or removing the original color is the first and most ticklish part of the redyeing process. Improvement of the preliminary part of the stripping operation by use of soluble pine oil was reported somewhat over a year ago. More recent investigations indicate that actual color removal with hydrosulfite or sulfoxylate can be even better controlled by preliminary treatment of the goods with those brands of soluble pine oil which contain additional hydrocarbon solvents. It has been found that these products further assist the dyer in obtaining a good bottom for the subsequent stripping operation and reduce the amount of stripper needed to remove the color.

The chief advantages of soluble pine oil in the preliminary treatment of redyed hosiery are as follows: (1) It penetrates and opens up the fibers, but does not injure them. (2) It removes much of the color, but does not start the resist colors in the picot edge or clock. (3) It reduces the amount of hydrosulfite or sulfoxylate necessary to complete the operation. (4) It decreases the stripping time, and thereby reduces the danger of damage to the goods, due to machine manipulation.

Stripping Process

The preliminary bath is composed of 1 to 3% of soda ash and 1½ to 1¾% of soluble pine oil. The amount of soda ash used is dependent on the amount of oils and other finishing materials which must be removed, the hardness of the water, and the weight of the hosiery. Heavy hosiery (service weight), hard water, and the presence of large amounts of finishing materials necessitate the higher percentages of soda ash. Likewise, chiffons and other sheer numbers call for the minimum amounts of soluble pine oil, and the heavier numbers require the maximum amounts.

The bath is prepared by dissolving the soda ash in the machine which contains nothing but water. Next the soluble pine oil is added, and the bath heated to 180° F. The hosiery to be stripped is then entered, and the bath is brought to a boil. It is kept just under the boil for 20 to 30 min. The bath is then dropped, and the goods given one hot rinse. This is followed by the stripping bath itself. Either hydrosulfite or sulfoxylate, whichever is preferred, may be employed, but in either case the quantity used should be reduced to 50 to 75% of the amount formerly used.

Don't Be Afraid of The Microscope!

Article XI. Photomicrographic Technique (Cont.)

By Edward R. Schwarz, S.B., A.T.I.

In photographing textiles through the microscope, the correct time of exposure and proper use of filters are of great importance in obtaining results which will prove of real use to the investigator. The accompanying discussion by Professor Schwarz should be extremely welcome, therefore, to many photographers in the mill laboratories.

IN MAKING photomicrographs the determination of the correct time of exposure will be somewhat a matter of judgment. It depends directly upon the intensity of the illumination as shown in the image formed on the ground glass of the focusing screen. This intensity, in turn, will vary with several factors. These are: (1) degree of magnification, (2) effective numerical aperture, (3) the filters used, and (4) the type of illuminant. The duration of exposure varies inversely as the square of the effective numerical aperture and directly as the square of the linear magnification. (The latter may be determined closely by estimating the proportions of the back lens which is filled with light and multiplying this ratio into the numerical aperture of the objective.) It is essential that the condenser have a numerical aperture of equal amount or greater than the objective used.

The filter factor to be employed depends upon the filter itself and the source of light, together with the type of emulsion used on the photographic plate or film. These factors are shown at the right of the nomograph (Fig. 7) which will be referred to later in this article.

Time of Exposure

A convenient method for determining the approximate time of exposure for any given condition is to set up the apparatus with a specimen of sufficient detail to show clearly when the best definition and resolution have been reached—a test slide such as that of any standard diatom (for example, Pleurosigma Angulatum is recommended) using, say a 16-mm. objective of numerical aperture 0.25, 100 diameters magnification and a tungsten lamp, such as the high-powered Spencer illuminator, with no filter. Take several pictures at a range of exposure. This may be conveniently done on a single plate by moving the dark slide over the plate by regular increments so that five successive portions of the surface of the plate will have been exposed over increasing intervals (Art. XI; Fig. 2, Dec. 20, 1930).

If the time exposure attachment is used, it will be possible to select a short exposure such as 1/100 or 1/50 of a second and make successive exposure intervals multiples of this unit. For example, the first strip may be exposed for two units, the next for four units, the next for eight, the next for sixteen, etc. When the plate is developed and, if desired, prints made from it, the correct time of exposure can be readily judged.

The time of exposure thus determined may be used as a basis for the computation of exposure factors, using 100 magnifications and numerical aperture 0.25 as unity. To eliminate the necessity for computation of the remaining factors the nomographic chart shown in Fig. 7 has been devised by the author. Its use will be quite apparent from the sample case worked out on it. The scale at the extreme left gives by direct reading the correct factor for any magnification (based on 100 diameters). Locate this factor on the next scale to the right—noting the instructions beside the scale—and strike a line from it to the standard time. Now connect the proper filter factor with the numerical aperture (or objective) employed. Finally strike a line connecting the points determined on the plain scales. This line will cross the exposure scale at the required number of seconds or minutes.

Textile photomicrography is largely concerned with specimens which are colored rather than objects which are black and white. The proper rendition of color contrast is very important, and for this reason it is valuable to have an understanding of the materials available and the devices which may be resorted to for satisfactory work. With this in mind the author has prepared the chart (Fig. 8) which shows the color chart as reproduced in the Eastman Kodak publication, "The Photography of Colored Objects," as it would appear under various conditions. The Commercial 33, orthochromatic, polychrome, and panchromatic emulsions were used.

It is evident that if the Commercial 33 emulsion is employed, it is impossible to distinguish satisfactorily between deep red and black; between red, orange, and yellow; or between violet, blue-green, yellow-green, and green. An object transmitting or reflecting red, orange, or yellow will photograph dark; blue portions will be reproduced light; while violet and the greens will be gray.

In contrast to this, the orthochromatic plate shows

*Article I, "Possibilities of Microscope in Textile Industry," April 27, 1929; Article II, "Types of Microscope Applicable to Textile Industry," May 18; Article III, "Handling the Microscope with Efficiency and Understanding," June 22 and June 29; Article IV, "Methods of Illumination," Aug. 17; Article V, "Useful Accessory Equipment," Sept. 21; Article VI, "Textile Micrometry," Oct. 26; Article VII, "Mounting Textile Specimens," Dec. 14 and Dec. 21, 1929; Article VIII, "Preparing Cross-Sections of Textiles," Jan. 18 and Feb. 15, 1930; Article IX, "Recording Data," May 24 and May 31; Article X, "Photomicrographic Apparatus," Aug. 16 and Aug. 23; Article XI, "Photomicrographic Technique," Dec. 20, 1930.

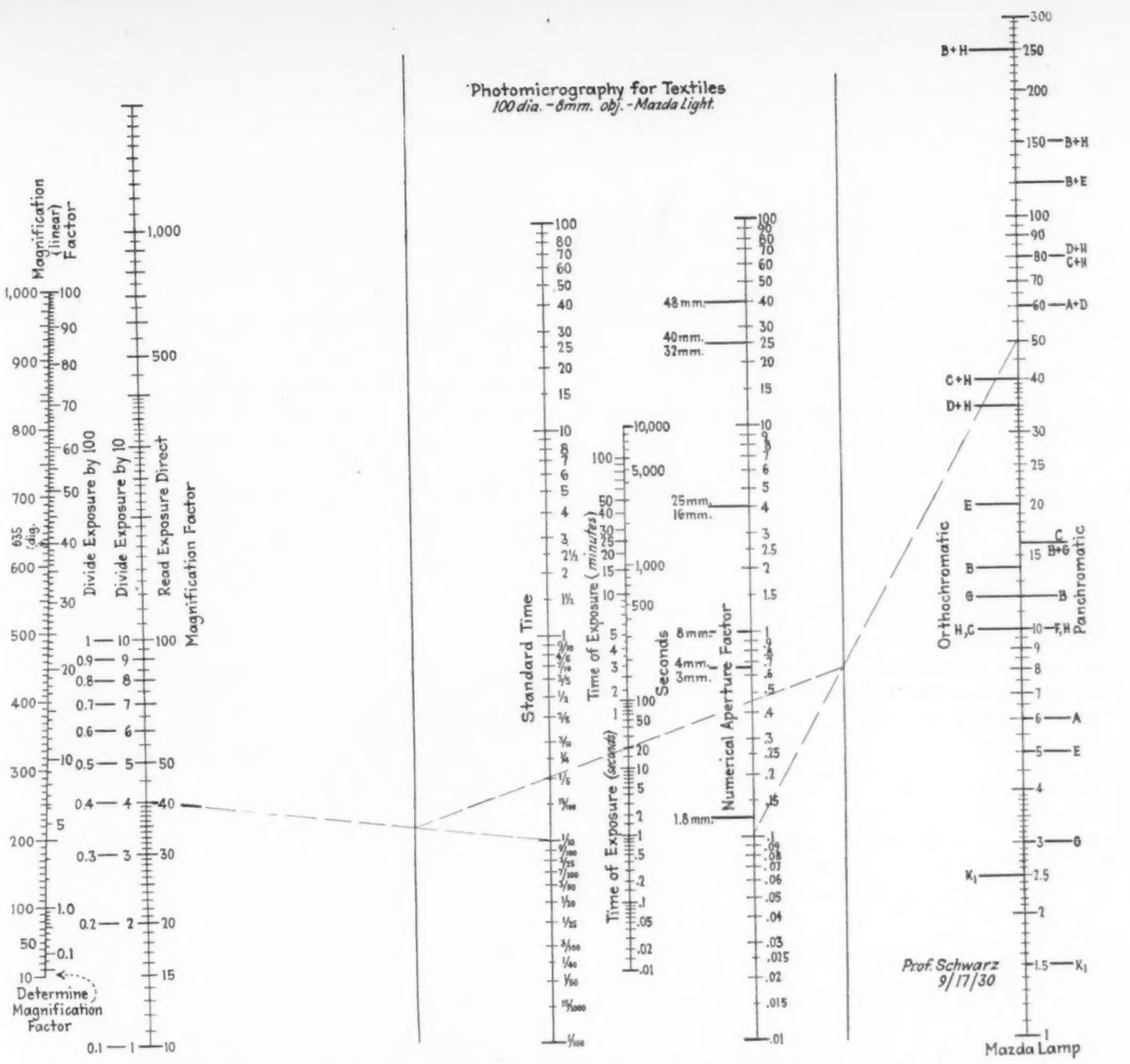


Fig. 7. Nomograph for determining time of exposure in making photomicrographs

deep red and black as very dark; red as dark gray; orange as light gray; yellow, yellow-green, and blue as light; green, blue-green, and violet as progressively darker grays. Orange will be rendered slightly darker than violet, but with insufficient contrast to be definitely distinguishable.

The polychrome plate adds blue-green to the orange and violet group, but otherwise acts as the ortho emulsion. It is, in fact, only a slight modification of the orthochromatic type.

The panchromatic emulsion enables the reds and yellows to be photographed lighter than the greens and blues. Here deep red, violet, blue, and blue-green are reproduced as dark gray; and on the whole there is less contrast between any two colors than will be found with the other kinds of material.

Use of Color Filters

With the details of filters and their use still to be discussed, it will not be amiss to compare the results obtainable in two typical cases with the above results. If a blue filter (Wratten H) is used, all the colors containing blue will photograph light, while those lacking in blue will photograph dark. Thus red, orange, and yellow may be differentiated from yellow-green, green, blue-green, blue, and violet, although no real difference is evident between individual colors in either group. It should also be noted that the results thus obtained are directly opposite to those given by the panchromatic emulsion, and that they differ markedly, in certain particulars, from any of the others.

If, on the other hand, a yellow filter (Wratten E) be used with the Commercial 33 plate, results very similar to those obtained with the panchromatic can be expected. The time of exposure will be much greater, however.

With the foregoing in mind, and by reference to these charted figures, it will be possible for the textile microscopist to select the proper material to produce the effect he desires. As a case in point, consider a specimen which is colored blue-green in one portion of structure and yellow in another. It is desired to show contrast between these colors so as to emphasize the structural details. To use a Commercial 33 plate or an orthochromatic emulsion would defeat the purpose. The polychrome plate, however, will furnish the differentiation. If these is some possibility of the yellow verging on the orange, the panchromatic plate should be used.

It would require too much space and would be somewhat out of place to give a detailed discussion of the nature and production of color. The reader will do well to refer to an elementary treatise in physics. "Light and Sound," Franklin E. McNutt, Constable, 1924; "New

Practical Physics," Black & Davis, MacMillan, 1929; "Physics for Technical Students," Anderson, McGraw-Hill, 1925. The excellent little volumes "Photomicrography" and "Color Photography," both published by the Eastman Kodak Co., are also recommended.

Filters Absorb Colors

It will suffice to say that color always should be thought of as the result of subtraction from white. Thus red is the result of the removal of blue-violet and green, while green is the result of the removal of blue-violet and red. Complementary colors, when added, produce white; and when subtracted they cancel to produce black. Filters simply act to absorb certain colors and transmit white minus the color absorbed.

The filters ordinarily employed are nine in number. By using them in pairs, the spectrum can be divided into approximately monochromatic sections. Characteristics of these filters and directions for their use are given in the book, "Color Photography," previously mentioned.

Where the maximum of detail is within the specimen (that is, internal contrast rather than external), the color transmitted by the filter should be the same as that of the specimen. Maximum detail or contrast may not always be desired. If an average rendition of the subject is required, or when two almost complementary colors appear in the same specimen and neither is to be accented, the combination of filters having a spectral transmission intermediate to those of the specimen colors should be used. While some idea of the probable effect of a filter or filter combination may be obtained visually by viewing the specimen through the desired combination, it must be remembered that the photographic emulsion is not sensitive to color in the same manner as the eye, and hence results may be misleading. It is safer to refer to the chart of Fig. 8 when photomicrographs are to be made.

In work with textiles it has been shown in previous articles of this series that many of the specimens to be examined have important characteristics which are third dimensional. It is of importance to determine definitely the direction of twist in cotton-fiber convolutions; to determine the exact crossing schemes of lappet and swivel, as well as leno weaves; and to study completely fabric and yarn surfaces of all kinds. The stereoscopic, monocular microscope serves the purpose for direct visual work; but since the micrograph in this connection is limited in its application, a better means of recording conditions must be found.

The answer is the stereoscopic photomicrograph (Art. IX; Fig. 13, May 31, 1930). More or less elaborate techniques have been developed; but two methods eminently suited for textile work have been devised by the author. One requires the use of a binocular, stereoscopic microscope, and the other gives good results with the ordinary instrument. No special photographic equipment is required, such as that illustrated in Art. X, Fig. 7; Aug. 23, 1930.

In the first case it is only necessary to incline the camera support far enough to bring the camera axis parallel to the axis of the microscope ocular. Using two plates, expose one through one eyepiece of the microscope; turn the latter through 180° and expose the second plate through the other eyepiece. If an attachable camera of the type shown in Art. X; Figs. 1 and 2, Aug. 16 and 23, 1930, is used, it is only necessary to transfer the camera from one eyepiece to the other.

In the second case, a special specimen holder is provided. This is arranged to fit the usual mechanical stage, and consists of a couple of rings on a base slide, so mounted that the fabric or yarn sample may be included between them, and so that they are rotatable through an arc of 5° on either side of a horizontal axis. The rings are also rotatable about a vertical axis which is centered with the axis of the microscope, so that the "tipping" axis may be properly lined up with the beam of light from an illuminant. (This is usually oblique incident light through a bull's-eye condenser.) The tilting axis

(Continued on page 63)

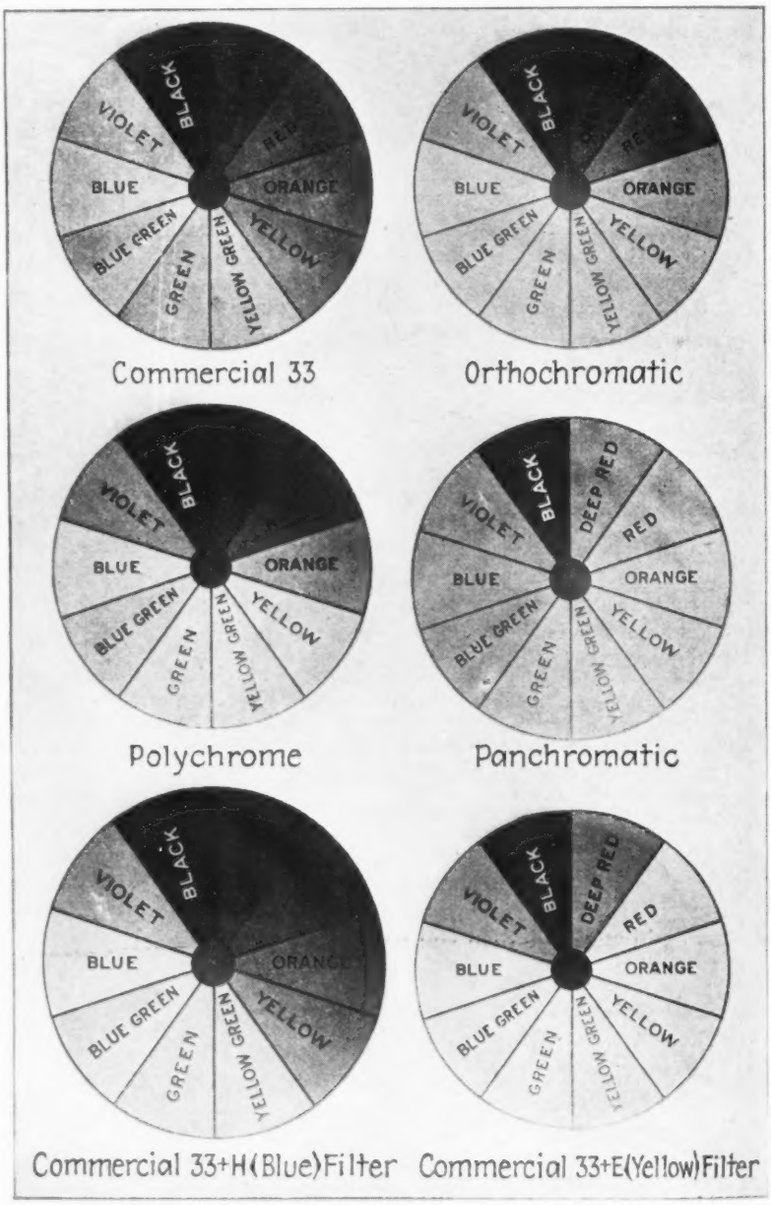
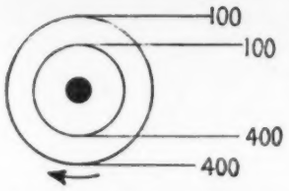


Fig. 8. Effects obtained by photographing color chart using various emulsions and filters.



A Common Transmission Error

By W. F. Schaphorst, M.E.

Fig. 1. Erroneous arrangement

A COMMON error in arrangement of pulleys and belts is shown in Fig. 1. The larger pulley is the standard pulley on an electric motor. The motor is underloaded. Somebody sees an opportunity to increase the load, so the smaller pulley is added. That is, the two pulleys are placed side by side on the same overhanging shaft and both belts pull against the bearing in the same direction. The total pull as indicated by the figures amounts to 100 + 100 + 400 + 400, or 1,000 lb.

This is not good engineering practice, because motor bearings are designed for a definite bending force. All bearings have their limitations of course. If the two belts leave the pulleys in the same direction, as shown in Fig. 1, the design is wrong because the chances are that the bearing will not be able to withstand the combined leverage or bending moments. The outside pulley, being farther away, causes the bending stress to be greater than that due to an equal pull on the inner pulley.

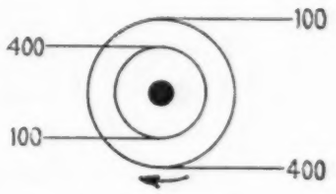


Fig. 2. Correct arrangement

By so arranging the drives that the belts will leave in opposite directions, as shown in Fig. 2, the bending stress will be less than with a single pulley and with the motor pulley fully loaded. Such a condition is all right. Here we have 500 lb. acting in one direction exactly balanced by 500 lb. acting the other way. The belt at the left, Fig. 2, is a top-pull belt, true; but that is better than ruining the motor for the sake of two under-pull belts.

Another point to bear in mind is this: Overhung pulleys on electric motors should always be operated as close to the bearing as possible. If you must run belts as shown in Fig. 1, or if you must place the pulley at considerable distance from the motor bearing, use an additional outboard bearing.

Pointers on Patents—

Trade Secrets

MANY inventors whose discoveries have found practical application in the industries prefer to protect them by keeping them trade secrets. Thus it is possible to secure a monopoly which is in many instances more enduring than that given by the patent laws. Some manufacturers also resort to this means to keep from their competitors details of unpatentable discoveries or of methods for which it is impossible to secure a valid patent, as in cases where the inventor has forfeited his right to a patent or where the prior art is so close that patent tribunals will probably hold the change to be a matter of mere mechanical or chemical skill. Some manufacturers hide behind the protection of a trade secret to keep from some patentee the fact that they are infringing or pirating his patent. Under this last state of affairs it is often possible to persuade a federal court to force the manufacturer to disclose his secret so that it can be compared to the disclosure of the patent.

Some inventions lend themselves more readily to protection by trade secrets than others, while many inventions cannot possibly be protected by this means. For instance, many chemical compositions defy analysis and can not be forced to yield any indication of the method by which they were produced. On the other hand, devices sold on the open market can easily be copied by competitors.

The greatest drawback to trade secrets is the fact that they are so difficult to protect. It is true that courts will readily grant relief against any one who steals the secret or gets it through a dishonest employee, but this does not afford protection against the many others who may come upon the secret honestly. Furthermore, if the product of a trade secret is on sale or in use for more than two years, the right to patent protection is forever waived.

Some inventors seek to protect their trade secrets by taking out a patent containing misleading information or omitting an essential detail. Needless to state, when this is proved to the satisfaction of a court, the patent will be declared invalid. Other inventors seek to avoid the rule that two years' commercial use of the secret forfeits the right to a patent by filing an application and keeping it pending as long as possible. If, during the first few years of its pendency, the secret is rediscovered by another, they take out the patent. If not, they either abandon the application or try to keep it pending for several more years.

An excellent way to augment the protection of a trade secret is to select distinctive trademarks, labels, and containers for the product of the process. If the product has any merit at all, and plenty of money is spent on advertising and in making the trademark a household word, the trademark may soon become more valuable than the trade secret itself or any patent that might have been secured thereon.

The reason for this is that the public soon comes to associate the excellence of an article with the trademark, label, and container and has to be educated all over again every time a new product is put on the market. Some dishonest competitors try to take advantage of this by imitating the containers, labels, and trademarks of well-established products, but the courts are always ready to restrain them and give triple damages to the injured party.

This article is based on Bulletin No. 2 of the Patents Committee of the Technical Association of the Pulp and Paper Industry and is presented to readers of TEXTILE WORLD through the courtesy of this committee.

OVERSEERS' ROUND-TABLE

THIS department offers a new subject for discussion each week and gives readers' comments on problems introduced during previous weeks. The subject which was opened four weeks ago is closed this week and a summary of contributed ideas is given on opposite page

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Employing Relatives?

Editor, Overseers' Round-Table:

I REMEMBER very well serving a long apprenticeship in a very large mill under a stern parent who was a very successful overseer, and those years have made me believe, with Pete, that a man in mill work is better away from his relatives.

In my case there were many advantages, for when I needed tuition and help in difficult work it was given freely, perhaps too freely, for when I moved to another mill I realized that one important phase of tuition had not been taught, that of relying on my own ability and initiative to pull me out of a tight corner.

Years of experience, in my case, show that a man does his best work when he has to solve the problems that rise during daily routine without the aid of a guardian angel. It is then when he finds himself, when he gains that self-confidence and a sense of true values which enable him to control men with a sound grasp of the difficulties he is likely to meet.

An overseer employing a relative is in a difficult position. He may be just and his relative a good worker, but there are many times when this association places him in a difficult position and definitely ties his hands. W. K.

Editor, Overseers' Round-Table:

MY PERSONAL experience leads me to believe that there is no legitimate reason why relatives should not be employed, if both the overseer and employee conduct themselves right.

I was employed under my brother for several years and I am sure there was no consideration shown me that would not have been extended to any other employee, and I did not expect any. If I saw a chance to make an improvement I could talk to my brother freely, where I might have hesitated to take it up with a stranger, so I believe the arrangement was mutually profitable.

Where there is so much talk of pull, or of nobody but a relative getting a break, it is usually the fault of the overseer or of the employee, and it brings very forcibly to mind the old adage, "where there is so much smoke there is sure to be a little fire." J. E. BRATTON.

On "Scouting" Other Mills

Editor, Overseers' Round-Table:

IN REGARD to putting "scouts" in other mills, I would like to say that I am not in favor of doing such things, as it looks very common and is the same thing as stealing, in my opinion.

Throughout the south the overseers meet two or three times a year and discuss different methods and exchange ideas, which is a good thing as I see it. If an overseer isn't smart enough to keep up with the modern way of doing things then he should be discharged.

In conclusion, there are a number of ways of finding out what the other fellows are doing without having to send someone out to spy on them. For instance, there are quite a few different ideas written in TEXTILE WORLD and other magazines. T. A. S.

Editor, Overseers' Round-Table:

THE QUESTION of "scouts" is not worthy of the Overseers' Round-Table talk. The idea alone is low down and mean, to say nothing of the actual practice. Any overseer who would stoop to such action is not worthy of his job. A. COOPER

Who Shall Control

"EVERY so often you hear of friction between an overseer and the man who buys supplies," Superintendent Chase started the overseers' meeting. "In some mills there is a regular purchasing agent; in others, the super or office manager buys the supplies. However, no matter who does the buying you have all heard of cases where the overseer sends in a requisition for a certain type or make of bobbin, spool, bearing, or whatever it may happen to be, only to have the man who does the purchasing buy another kind. There is always a little unpleasantness in such cases and talk about who was in the right. I think it would be helpful if we could decide whether the overseer or the purchasing agent should have the final say about buying materials."

"Sometimes when I'm sitting around the house evenings," Bill rumbled, "I run out of cigars, so I ask my oldest boy to step around to the corner and bring me a couple of a certain brand. Suppose that he came back with another brand and tried to tell me that they were better and cheaper. First of all, of course, I'd rave until my wife stopped me, but then I'd settle down and tell the boy that, after all, I was the one who was going to smoke the cigars, that he didn't know as much about cigars as I did, and that I had sense enough not to smoke cigars which cost too much.

"I don't want to compare anyone who purchases supplies with a boy," Bill laughed as he continued, "but you can all see that it is the same sort of case as the overseer sending in a requisition for a certain brand of supply which he wants, and having the purchasing agent buy something else. I'll admit that having someone to do the actual purchasing for you saves a lot of time, and the purchasing agent has a chance to look around and get the best price, but, believe me, I'm the one who has to use the material in my department and I know what I want. Any good overseer is careful to see that he gets full money's worth, because he has to make a good showing in his department, and I think that, as he is the one who should know the most about supplies and their uses, he should have the final say in any purchase."

"If we followed Bill's plan," Pete took the floor

Purchases?

"I believe that it would be a step backward. In the old days the overseers used to do most of the buying and there was a lot of confusion and time wasted. Then, if an overseer was seen having dinner with a supply salesman there was a lot of gossip about graft. The reason one man was picked out to do all the buying was to save time and avoid suspicion. With the overseer having the final say about any purchase you have all the troubles of the old system with the addition of one other step to waste time. The purchasing agent is a specialist who can look into a thousand details of service, freight rates, reputation, and so forth, which the overseer would never have time for. The man who does the buying must know his stuff if he is to last long and he knows the whole picture; quality, price, and everything else. There should be cooperation, of course, but the purchasing agent is a specialist who can do a better job than anyone who just buys occasionally and I think he should have the final say."

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Do *you* think that the purchasing agent or the overseer should have the final say about buying supplies for the overseer's department?

Overseers and others are invited to discuss this and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable.

The Super's Instructions

Editor, Overseers' Round-Table:

PERSONALLY I cannot imagine an overseer having to be told how to do the work. What is an overseer, if not the one who directs the work? Is there any one in the factory who is closer to the actual work, and workers, than the overseer? Is he not the responsible head of the department, the one who must shoulder the blame of everything that takes place in his department?

An overseer should be capable of doing the work without being told how to do it by the super. There could be no greater detriment to the morale of a department than the fact of the overseer having to go to the super. Efficient overseers do not get into a "rut," or "muddle," as Hank suggests a lot of overseers do. Nor are they less alert to the latest developments than the super.

What a wonderful time the super would have telling the overseer how to do the work, and what a fine time the overseer would have chasing the super all over the factory to ask questions. What a condition of affairs would exist in trying to fix the blame when things did not come out right. Cooperation must exist between the overseer and the super, but, as Bill says, if the overseer does not know how to do the work it is time to get an overseer who does.—and by so doing the super will have time to attend to his own duties

R. A. G.

Editor, Overseers' Round-Table:

I THINK that any overseer who does not keep up with present times should not be kept in his position.

I agree with Bill that the overseer should have full charge of his department. At the same time, if the super has a better way of doing the work the overseer should listen to him, and if it is better than his own way he should adopt it. I am working in a plant at present where the overseer of one department won't use any method but his own, as he thinks his way is the only way, and there is a bad leak in expenses as a result.

C. W. P.

Small Stores in the Mill

Editor, Overseers' Round-Table:

THERE SHOULD be a rule enforced against the selling of cold drinks, candies, etc. in the mill. Some mills have centrally located stands to which the workers are allowed to go, but every trip means that someone is watching two jobs, or that some work is not being watched, which does not go to produce the best of quality. The stand draws quite a crowd, which usually means a certain amount of conversation and lingering, and is almost always an eye-sore.

The mills that allow drinks and candies to be sold from a truck or wagon pulled from room to room are a little better off than those mills that have stands, but still it takes the workers from the jobs, and litters up a place.

Both of these systems make for untidy rooms, and in both of them it is practically impossible to keep the cold drink bottles from becoming scattered over the mill. These bottles constitute a real menace for they are easily broken, and as a result the men taking out waste and the sweepers risk the danger of cut hands all of the time.

The biggest objection however, is that it encourages the workers to eat between meals. Everyone knows that this overworks the digestion, but for the average man the temptation to step to the stand, or the wagon and get a snack is too great; with the result that the appetite for the regular meal is dulled, and a waste of food results. The small amount spent every day soon mounts to quite a sum which could be saved if this selling was abolished.

SOUTHERNER.

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Summary of Discussion on Hiring Relatives

Slightly over 73% of the letters received voted against an overseer hiring his relatives to work in his department. These contributions stated that it was almost impossible to keep the feeling of fairness prevalent in a department where relatives worked, and that both the overseer and the relative were handicapped. Those replies which favored the employment of relatives stressed the point that the overseer should so conduct himself as to be above suspicion, and that as long as he produced results he could hire whom he pleased.

NEWS about MEN

✦ THURMOND CHATHAM, president of Chatham Mfg. Co., Winston-Salem, N. C., has been elected president of the Wool Blanket Manufacturers Association. M. H. GRAY, president of Old Town (Me.) Woolen Co., was elected vice-president, and J. P. LINNEN continues as secretary and treasurer. The new executive committee, in addition to the officers, includes ALBERT HERZING, president of St. Mary's (Ohio) Woolen Mfg. Co.; PAUL BENNINGHOFEN, Shuler & Benninghofen, Hamilton, Ohio, and F. E. HORNER, of Horner Bros. Woolen Mills, Eaton Rapids, Mich.

✦ R. O. LINDSAY, president of the Guilford Hosiery Mills, Inc., High Point, N. C., has been elected a director of the Wachovia Bank & Trust Co., at a meeting of the stockholders and directors.

✦ FRANCIS H. DEWEY, president of the Queensbury Mills, Worcester, Mass., has been relected chairman of the board of the Mechanics National Bank of that city. EDWARD A. BIGELOW, treasurer and manager of the Hopeville Mfg. Co., FRANK C. SMITH, JR., a director of the Uxbridge (Mass.) Worsted Co., Inc., CARL R. BROWNELL, president of the Worcester Tire Fabric Co., and GEORGE S. BARTON, president and treasurer of Rice, Barton & Fales, Inc., all of Worcester, were elected directors of the same bank.

✦ VICTOR M. MONTGOMERY, president of the Pacolet (S. C.) Mfg. Co., is one of 172 breeders of purebred Holstein-Friesian cattle in 31 states who has been recommended for national honors by the Holstein-Friesian Association of America.

✦ B. B. GOSSETT, head of the Chadwick-Hoskins Mills, Charlotte, N. C., and Pineville, N. C., has been reelected vice-president of the American Trust Co., Charlotte, and also a director of this bank.

✦ CLARENCE E. CHAFFIN, having been 25 years with the Bay State Thread Works, of which he is now president, treasurer and general manager, in Springfield, Mass., was given a handsome desk set by the company's eastern sales representatives at a conference in Springfield Jan. 16.

✦ W. H. MAY, president of the May Hosiery Mills, Burlington, N. C., was reelected a member of the general board of directors of the North Carolina Bank & Trust Co., at the recent annual meeting. J. H. MCEWEN, treasurer and general manager of the McEwen Knitting Co.; JOHN M. COBLE, president of the Pen-Co Hosiery Mills, and JOHN SHOFFNER, hosiery manufacturer, were elected as directors of the Burlington branch of the North Carolina Bank & Trust Co.

✦ JOHN BARBEY, president, and J. E. BARBEY, vice-president and general manager of Vanity Fair Silk Mills; also JOHN G. MOHN, of Mohn Bros. Co., wool hat manufacturers, all of Reading, Pa., were last week elected directors of the Farmers Bank & Trust Co., Reading, Pa.

✦ HENRY T. G. DYSON, president and treasurer of the Hudson (Mass.) Worsted Co., and FRANK TAYLOR, proprietor of Thomas Taylor & Sons, also of Hudson, have been elected directors of the Hudson National Bank.

✦ JOHN A. LAW, of Spartanburg, S. C., president of the Saxon Mills and of the Central National Bank of Spartanburg, has been reappointed a director of the Charlotte branch of the Fifth District Federal Reserve Bank at Richmond for a three-year term. ROBERT GAGE, vice-president of the Commercial Bank of Chester, S. C., was reappointed for a three-year term.

✦ W. D. BRUMBACH, president of A. J. Brumbach, Inc., Esterly, Pa., manufacturers of cassimeres and cloakings, was last week elected a director of the Penn National Bank, Reading, Pa.

✦ F. A. SHERRILL, W. T. NICHOLSON, D. J. CRAIG, ISADORE WALLACE, F. B. BUNCH, WILLIAM WALLACE and M. R. ADAMS were relected directors of Statesville (N. C.) Cotton Mills on Jan. 12. Election of officers was deferred until some future date.

✦ I. J. FORD was elected a director in place of W. C. WILKINSON, deceased, at the annual meeting of the stockholders of Linford Mills, Belmont, N. C., held Jan. 15. Officers elected were A. C. LINEBERGER, president; W. B. PUETT, vice-president; J. E. FORD, secretary and treasurer. The board of directors in addition to the above is composed of S. P. STOWE, C. W. KALE, C. L. BUMGARDNER and I. J. FORD.

✦ A. L. EMERSON, president of the Warrensburg (N. Y.) Woolen Co., has been elected a director of the Emerson National Bank, at that place, for the ensuing year.

✦ R. A. BRACE, head of the Fultonville (N. Y.) Hosiery Co., was elected vice-president of the Fultonville National Bank at the annual meeting of directors.

✦ T. S. GRAYSON, president; J. O. HUTCHEON, vice-president; J. L. DAVIS, W. A. BOYD, L. GARRETT, H. P. CARRINGTON, W. R. GANTT, J. G. HENDRICKSON, W. M. PASCHALL, W. P. LONGINO, HENRY RUSHTON, W. H. WARNOCK and J. B. LEE were elected directors of the Magnolia (Ark.) Cotton Mills Co.

✦ C. C. ARMSTRONG, president, mills in the Armstrong-Winget group, Gastonia, N. C., has been relected vice-president of the Citizens National Bank of Gastonia.

✦ E. P. GAYLORD, W. H. PHELPS, C. C. VALENTINE, R. E. GAYLORD and I. C. VALENTINE have been elected directors of New England Knitting Co., Winsted, Conn. Officers chosen were: President, E. B. GAYLORD; vice-president, W. H. PHELPS; secretary and treasurer, L. L. CHASE; general manager and assistant treasurer, I. C. VALENTINE.

✦ A. G. MYERS, president, Myers Mills, Inc., Gastonia, N. C., has been relected president of the Citizens National Bank of Gastonia.

✦ J. P. WRIGHT was reelected president of Delaware Rayon Co. at the regular annual meeting of the stockholders of the company, held in New Castle Jan. 16. Other officers and directors were elected as follows: J. WARREN MARSHALL, vice-president; H. L. BONHAM, GEORGE W. OLVANY and LEON H. RYAN, secretary and treasurer. This is the same board of directors that has been in charge of the company's affairs for 1930 with the exception of one member who was elected to fill the vacancy caused by the death of the late THOMAS A. DUFFEY. The new member is Judge George W. Olvany, of New York, who has been interested in the rayon industry for a long time.

✦ CHARLES L. AMOS, proprietor of the Melrose Hosiery Mills, High Point, N. C., has been reelected a member of the board of the North Carolina Bank & Trust Co.

✦ A. C. LINEBERGER, president of a number of textile mills at Belmont, N. C., was elected vice-president of the Bank of Belmont, at the recent annual meeting, and R. L. STOWE, treasurer of the National Yarn Mills, Inc., and the Chronicle Mills, was reelected president and W. B. PUETT, also prominent in the textile industry in Belmont was reelected cashier.

✦ D. B. COLTRANE, president of the Kerr Bleaching & Finishing Works, Inc., of Concord, N. C., was toastmaster at the annual banquet celebration of Gen. R. E. Lee and Gen. Stonewall Jackson, held at the Hotel Concord.

✦ J. C. SELF, of Greenwood, S. C., president and treasurer of the Greenwood Cotton Mills and the Ninety-Six (S. C.) Cotton Mills, has been reelected a director of the Bank of Greenwood.

✦ N. B. MILLS, A. L. MILLS, R. L. POSTON, GARNETT FAWCETTE, L. N. MILLS and GARLAND SHELTON were elected to the board of directors of Paola Cotton Mills, Statesville, N. C., and LEWIS POSTON added. Following officers were reelected: N. B. MILLS, president; L. N. MILLS, vice-president; A. L. MILLS, secretary and treasurer; R. L. POOVEY, superintendent.

✦ J. E. BENNETT, of James E. Bennett & Co., Chicago cotton, bond and grain brokers, was recently appointed chairman of the cotton committee of the Chicago Board of Trade.

✦ E. A. TERRELL, of Terrell Machine Co., Charlotte, N. C., has been elected a director of the Charlotte National Bank.

✦ J. B. MASON, vice-president of Joseph S. Mason & Sons, Westboro, Mass., has been appointed a member of the unemployment committee of that town.

✦ RUSSELL D. MASON, son of JOSEPH S. MASON, president of Joseph S. Mason & Sons, Westboro, Mass., has announced his engagement to GERTRUDE WINNIFRED BOWMAN, also of that town.

✦ B. B. Gossett, vice-president of the Gossett mills group, Anderson, S. C., presided at a get-together banquet last week at an Anderson hotel. The banquet was attended by about 50 men composing the organization of the Gossett chain of mills, including superintendents of the several plants office forces, overseers and others. Among the speakers of the occasion were: J. F. Shumatem, vice-president of the South Carolina Savings Bank, and T. F. Watkins, counsel for the mills.

✦ Charles M. Thayer and George Crompton, directors of the Crompton & Knowles Loom Works, Worcester, Mass., have been elected vice-presidents of the Peoples Savings Bank of that city.

✦ T. S. Dutcher, vice-president of the Chalmers Knitting Co., Amsterdam, N. Y., has been elected a director of the Montgomery Trust Co. for the year.

✦ Nelson D. White of Nelson D. White & Sons, Inc., Winchendon Springs, Mass., has been elected first vice-president of the First National Bank of Winchendon. Kenneth B. White, of the same corporation, was elected a director of the bank.

✦ T. H. McKinney, vice-president and general manager of the Standard-Coosa-Thatcher Co., Chattanooga, Tenn., has been appointed chairman of the National Affairs Committee of the Chatttanooga chamber of commerce.

✦ J. B. Harris, vice-president of the Greenwood (S. C.) Cotton Mills and the Ninety-Six (S. C.) Cotton Mills, has been elected a director of the Bank of Greenwood (S. C.).

✦ C. C. Carroll, secretary of the Wynantskill Mfg. Co., Troy, N. Y., and Miss Helen Flanagan were married last week.

✦ Solon D. Bausher, treasurer of the Glorie Underwear Mill, Inc., Eufaula, Ala., and past president of National Association of Hosiery & Underwear Manufacturers; Ernest C. T. Bick, president of Bick & Co., Inc., dyers and bleachers; Henry Janssen, vice-president of Berkshire Knitting Mills, and Charles E. Leippe, hosiery manufacturer, of Reading, Pa., were last week elected directors of the Berks County Trust Co., Reading, Pa.

✦ Alfred C. Rockwell, treasurer of the Rockwell Woolen Co., Leominster, Mass., and Howard H. Chase, president and treasurer of the Leominster (Mass.) Worsted Co., have been elected directors of the Leominster National Bank.

✦ Lester E. Gavitt, treasurer of the Gavitt Mfg. Co., Brookfield, Mass., has been appointed a member of the emergency employment committee of that town.

✦ R. Grady Rankin, secretary and treasurer, Hanover Mills, Inc., Gastonia, N. C., was recently named as chairman of the committee on conservation and development in the state legislature of North Carolina.

✦ F. J. Haywood, secretary of Cannon Mills No. 1 and No. 4, Kannapolis, N. C., has been chosen chairman of the manufacturing committee of the North Carolina Senate which is now in session at Raleigh, N. C.

✦ Grover C. Good, secretary and treasurer of the Globe Knitting Works, Grand Rapids, Mich., has been elected a director of the Grand Rapids Trust Co., succeeding the late Gerritt J. Diekma, U. S. Minister to Holland, who died recently. Mr. Good

John A. Law, president, Saxon Mills, Spartanburg, S. C., who has been reappointed a director of the Charlotte branch of the Fifth District Federal Reserve Bank at Richmond for a three-year term

is a former president of the Grand Rapids Association of Commerce, and is prominent in business and civic affairs.

✦ R. O. Huffman, of Morgantown, N. C., secretary and treasurer, Garrou Knitting Mills; J. T. Jennings, of Thomasville, secretary-treasurer, Maurice Mill Co.; Crawford F. James, Marion, Elizabeth James Mills; J. J. Corrigan, High Point, secretary-treasurer, Lock-Knit Hosiery Co.; H. E. Montsinger, Durham, secretary-treasurer, Knit-Well Hosiery Mill, Inc.; L. D. Tucker, R. H. Whitehead, Burlington, secretary-treasurer, Mohawk Hosiery Mills, Inc.; James J. Griffith Kernersville, secretary-treasurer, Vance Knitting Co.; H. I. Sink, Lexington, assistant secretary-treasurer, Montcastle Knitting Co.; A. H. Ragan, Thomasville, secretary-treasurer, Ragan Knitting Co., and J. E. Millis, secretary-treasurer, Adams-Millis Corp., of High Point, were elected to the board of directors of North Carolina Hosiery Manufacturers Traffic Association, on Jan. 15. The board is soon to meet and elect new officers. Present officers of the association are: J. E. Millis, president; R. O. Hoffman, vice-president; J. J. Corrigan, treasurer and Morris Prince, of Greensboro, secretary.

✦ Harlan T. Pierpont, treasurer of the Worcester (Mass.) Silk Mills Corp., has been elected a vice-president of the Worcester Mechanics Savings Bank.

✦ R. T. LeGrande, secretary and treasurer of the Shelby (N. C.) Cotton Mills, was recently elected to the directorate of the First National Bank of Shelby, to fill the vacancy made by the recent death of Judge James L. Webb.

✦ Charles A. Root, treasurer of the Uxbridge (Mass.) Worsted Co., Inc., has been reelected president of the Blackstone National Bank of that town. William L. Hayward, president of the Hayward Woolen Co., East Douglas, Mass., and Stanley H. Wheelock, president and treasurer of the Stanley Woolen Co., Uxbridge, were elected vice-presidents.

✦ R. B. Suggs, treasurer, Acme Spinning Co., Belmont, N. C., has been elected vice-president of Perfection Spinning Co., of that place, to succeed the late W. C. Wilkinson, of Charlotte, N. C.

✦ Harry Houghton, head of the carding department of the Grosvenordale Co., North Grosvenordale, Conn., has been elected assistant treasurer of the company with offices at Providence, R. I., main headquarters.

Obituary

Silas Alson Greenwood

Silas Alson Greenwood, vice president of Tom Wye, Inc., Winchendon, Mass., died from a heart attack Jan. 13 in Baldwinville, Mass. He was born in Hubbardston, Mass., Dec. 6, 1854, and had lived in Winchendon for 53 years. He was a vice-president of the Gardener (Mass.) Trust Co., and president of the Winchendon Cooperative Bank. He leaves a widow and a son, Robert B. Greenwood, assistant treasurer of Tom Wye, Inc.

J. J. Dewey

John Jaspar Dewey, 84 years old, president of the A. G. Dewey Co., Quechee, Vt., woolen manufacturers, died at his home there, Jan 14, after an illness of several months. He was graduated from Norwich University in 1865 and had been connected with the woolen company since 1873. He served as trustee at Norwich for many years, and also was president of the Woodstock railroad, director of the Woodstock National Bank and director of the Woodstock Electric Co.

J. A. Coleman

Joseph A. Coleman, president of the Morristown Woolen Co., Philadelphia, woolen and worsted yarn manufacturers, died Jan. 14 after a year's illness, Mr. Coleman, who was 69 years old, had been engaged in the textile industry for many years prior to taking the presidency of the Morristown company in 1917.

J. W. Fletcher

J. W. Fletcher, 44 years old, superintendent of the mechanical department of the Equinox Mills, Anderson, S. C., died at the Anderson County Hospital of pneumonia. He is survived by his widow, a son and three daughters.

John W. Bishop

John. W. Bishop, 60 years old, who died last week at his home in Spartanburg, S. C., was the first secretary of the Arcadia Mills, when the factories of that company were established a quarter of a century ago.

NEWS about MILLS

Cotton

Fitzgerald (Ga.) Cotton Mills, installed 24 Stafford looms in 90-inch widths, which were practically new, having been taken out of the **Hawkinsville Mill** three years ago and stored at Fitzgerald until they were ready to install them in the local plant. This will aid in adjusting the work in the night weaving department when the mill ceases to employ women and minors at night after March 1.

Swift Mfg. Co., Columbus, Ga., manufacturer of cottonades, coverts, tickings, stripes, mitchelin bed spreads and specialties, has purchased ice plant property from the Atlantic Ice & Coal Co. and will inaugurate an expansion program in the near future.

Griffin (Ga.) Cotton Mills, formerly the **Griffin Mfg. Co.,** are now running full-time, 55 hours per week. It is said that night operations are contemplated as soon as the day organization has been arranged. The mill formerly manufactured awnings, bed tickings, cottonades and napped fabrics, has been changed over to broadcloths entirely and these broadcloths are finished at the **Thomaston (Ga.) Bleachery.**

Kerr Mills (American Thread Co.), Fall River, Mass., started operations in several departments Jan. 19, calling for the employment of 800 more men.

Nashua Mfg. Co., Lowell, Mass., has announced wage reductions at its local mill from 10 to 20%. The working schedule will be changed to a five-and-one-half-day week until further notice.

Slater Mills, Inc., Webster, Mass., will be operated on a five-days a week basis, with no work in any department on Saturdays.

Barker Mill, Auburn, Maine, has been purchased by the Central Securities Co., Augusta, Me., which is headed by Walter S. Wyman, power magnate. The Barker Mill manufactures shirtings and pillow tubing but has been idle since April 1930. The **Bates, Androscoggin** and **Hills Mills,** Lewiston, are controlled by power subsidiaries of the Central Securities Co. It is believed operations will be resumed at the Barker Mill before long.

Clark Thread Co., Newark, N. J., has leased a portion of its mill at East Newark, totaling about 25,000 sq.ft. of floor space, to the Western Auto Supply Co., Kansas City, Mo., which will occupy for another branch of operation. Other parts of the East Newark mill have also been placed on the market.

***Martel Mills,** Elk Mountain, N. C., recently leased by the **Clyde Mills, Inc.,** of Newton, N. C., are being put into operation as quickly as machinery has been put into condition or replaced by new equipment.

Groves Mills, Inc., Gastonia, N. C., have announced plans for the immediate erection of a $150,000 yarn dyeing and finishing plant. Bids have already been received for the new construction work which will include a one-story brick building containing approximately 50,000 sq.ft. of floor space. It is planned to have the finishing plant in operation within four months. Lorne Payne, formerly of Stamford, Conn., will be superintendent of the new plant which will employ about 150 operatives. Groves Mills, Inc., operate 26,410 ring spindles on regular and reverse twist combed peeler yarns, and produce a wide range of counts, single and ply, for mercerizing and the thread yarn trade.

Ranlo Mfg. Co. (Modena Plant), Gastonia, N. C., has had some of the machinery in the plant overhauled, other machinery removed and replaced with modern equipment and four of the latest Foster winders installed.

Stonecutter Mills Co., Spindale, N. C., which has been running on a drastically curtailed basis for several months, recently secured enough business on all-rayon goods to keep its present organization employed until early summer.

Delgado Mills, Wilmington, N. C., recently acquired by the Seaboard Public Service Co., an Insull subsidiary, have retained Robert & Co., Inc., Atlanta, Ga., as engineers for the present program of plant reorganization and electrification. New looms will be installed for the manufacture of carded broadcloths, it was announced recently. David Tousignant is the new resident manager of the mill.

Commander Mills, Inc., Sand Springs, Okla., wide sheeting, resumed operations Jan. 15, when between 75 and 100 employees returned to work. H. D. Lowell, operating chief, stated that the night shift has been restored, and employment for 35 additional men will be given Feb. 15 with completion of a bleachery at the mill.

Esmond (R. I.) Mills put into effect on Jan. 19 a general wage reduction of 10%. While no reason for the cut has been made public, it is understood that the action was taken because of downward trend of prices for textile products, necessitating lower operating costs.

Altavista (Va.) Cotton Mills, Inc. S. V. Kemp, attorney, Lynchburg, Va., has been named receiver of this company, by order of Judge Don P. Halsey. The company was organized in 1910 and has a capitalization of $450,000, but in 1923 the capital was increased to $750,000. The plant suspended operation last September.

Riverside & Dan River Cotton Mills, Inc., Danville, Va., are now employing 3,100 persons, or 600 more than were working ten days ago, it was said. It was also learned from the same source that 7,000 looms are being operated.

Dominion Textile Co., Ltd., Montreal (Que., Can.). Fire in the plant at Notre Dame & Frontenac Sts., caused approximately $150,000 damage which is covered by insurance. Machinery and stock on all floors were ruined by smoke and water. The plant employed 500.

Everlastik, Inc., of Chelsea, Mass., has completed negotiations for the purchasing of the Collie Bldg., formerly occupied by the **Kingston (Ont., Can.) Hosiery Co.,** and more recently by Collie's, Ltd. The building will be thoroughly overhauled and machinery for elastic fabrics and webbings installed.

Wool

Central Worsted Co., Inc., Central Village, Conn., has filed preliminary notice of dissolution under state laws.

Bigelow-Sanford Carpet Co., Thompsonville, Conn., according to Superintendent Elliott I. Peterson, will gradually increase working schedules in various departments from 25 to 50%.

Hanover (Ill.) Woolen Mfg. Co. plans to resume production soon.

H. T. Hayward Co., operating the **Hayward Mills,** Franklin, Mass., has received large orders and will operate the plant day and night.

Thorndike Co., West Warren, Mass. is running full time in its woolen division and expects to continue this rate of operation through the present spring season. The machinery in the cotton division of the Thorndike Co. is being sold and there have been quite a few shipments of machinery from the plant since the first of January.

Hillside Woolen Mills Co., Worcester, Mass. Hyman S. Levy, proprietor, has filed a voluntary petition in bankruptcy in the U. S. District Court at Boston, disclosing liabilities of $23,181 and assets of $200. Before starting the business several years ago, Levy was treasurer and manager of the **Jamesville Woolen Mills Co.,** Worcester, which also had financial difficulties and is now out of business.

Mohawk Carpet Mills, Amsterdam, N. Y., has construction work under way on a new warehouse at the McCleary, Wallin & Crouse branch which will provide several thousand additional square feet.

Buffalo Spinning Mills, Clarence, N. Y., four sets of wool cards for making woolen and merino sweater yarns, have closed down indefinitely until business improves.

**Indicates previous mention of project.*

Buttonwood Worsted Mill, Philadelphia, Pa. Thomas H. Ball and Melville Boyd have been appointed temporary receivers for this company, in bond of $50,000.

C. & C. Dluty, Inc., Providence, R. I., recently organized with a capital of 100 shares of stock to operate a local woolen mill, will be represented by Charles Dluty, 32 Ninth St., Providence, one of the incorporators. Edward J. Feeley, Providence, is also interested in the new company.

Burlington Mill (American Woolen Co.), Winooski, Vt., has recalled a number of its former operatives and is running with a 15% larger force than two months ago, there being 1,400 hands on the payroll. A small night shift is used.

Chippewa Falls (Wis.) Woolen Mills Co. has enlarged its plant and installed additional machinery to take care of its demands. The company reports success with its line of ski suits in addition to its other lines of woolen sportswear and woolen outerwear.

Knit

Archer Hosiery Mills, Columbus, Ga. The addition which will house new full-fashioned hosiery machinery, is nearing completion and operations of the full-fashioned equipment will probably start within 30 days.

Camilla (Ga.) Hosiery Mills, which were recently organized with capital stock of $25,000, have purchased new equipment, including 30 knitting machines, 48 gauge, for the production of infants' and children's fancy hosiery. Operations at the new plant began this month. A. G. Whitehead is president and M. E. Whitehead, treasurer, of the company.

Rome (N. Y.) Textile Co., inactive for some time past, has filed final notice of company dissolution under state laws.

Pilot Full-Fashioned Mills, Inc., Valdese, N. C., have authorized enlargement of their plant. Work will begin at once on construction of two brick additions in which will be installed 20 machines for manufacture of full-fashioned hose. There will be 100 employees added to the payroll of the mill which now employs about 230 persons.

Schletter & Zander, Inc., Philadelphia, Pa., a Delaware corporation, have filed change of company name to the **Signature Hosiery Co.**

Interwoven Mills, Inc., Martinsburg, W. Va., resumed operations at their plant on Jan. 13, following a shutdown since Dec. 18. About 2,000 workers will be employed until further notice.

Holeproof Hosiery Co., Milwaukee, Wis., according to Max Freschl, vice-president, is working at capacity and hopes to do so for the next few weeks. No employees have been laid off.

***Toronto (Ont., Can.). Herbert Hosiery Mill,** Norristown, Pa., will open a branch at Queen and River Sts., here, shortly, according to Main Johnson, general manager of the Toronto Industrial Commission. More than 100 hosiery machines will be installed, and the new firm will employ about 200 people.

**Indicates previous mention of project.*

Silk

Willimantic (Conn.) Silk, Inc., has awarded general contract to O. L. Willard, Willimantic, for a one-story mill, 53x222 ft., brick type with gravel roof, reported to cost over $60,000, with machinery.

Belding Heminway Co., Belding, Mich., resumed operations in the fabric department of all four mills last week with virtually the same number of employees as before the holiday shutdown. Work was started last week in the thread divisions. Both sections, however, are operating on a reduced schedule, the policy of the firm being to keep as many employees as possible and reduce the hours if necessary. The mills closed Dec. 20 for the annual inventory.

Meadows Brothers, operating at the former local mill of the **Washington Silk Co.,** Freeland, Pa., secured under lease last fall, have leased additional property in the immediate vicinity of the plant, known as the Dandko Garage, and will remodel and convert for silk manufacture. Looms and auxiliary equipment will soon be installed.

Amalgamated Silk Corp., York, Pa., has been taken over by the **Orinoka Mills,** of Philadelphia, Pa., who plan to reopen the plant. Jacquard looms will be installed and the company contemplates manufacturing tapestry. Officials of the Orinoka Mills were in York and made an inspection of the plant. The machinery, which has been at a standstill since the Amalgamated Silk mills went into bankruptcy, is being given a thorough inspection. It is said the local branch of the Orinoka Mills will open as soon as the jacquard looms can be installed, which will be before Feb. 1.

Rayon

***Belamose Corp.,** Rocky Hill, Conn., resumed operations Jan. 14, after the three weeks' annual shutdown for repairs and inventories. It is expected that practically all former employees will be given work. The management states that the past policy of giving work to as many as possible will be adhered to and a few employees may work alternate weeks until the departments are back to full-time operations.

Skenandoa Rayon Corp., Utica, N. Y., is understood to be operating at approximately 85% of full capacity, employing a full complement of workers during the day and a reduced working force at night. Reports that the company's plant has been shut down for an indefinite period are declared to be incorrect.

American Enka Corp's. (Enka, N. C.) elementary school which is being constructed at a cost of about $21,500 is scheduled to be completed this month.

Finishing

American Piece Dye Works, Inc., piece silk dyeing plant, Passaic, N. J., sold equipment and machinery at auction on the premises on Jan. 20, at 11 a.m., by order of Walter A. Sykes, receiver. William A. Sumner, of Paterson, N. J., is attorney for receiver, and Samuel T. Freeman & Co., auctioneers, of Boston and Philadelphia, conducted the sale.

Apex Piece Dyeing Co., Paterson, N. J., has begun superstructure for new two-story rear addition to dye house, 60x80 ft., to cost about $30,000, with equipment, and will occupy the unit immediately on completion. General contract recently was let to J. H. Steele & Son, 42 North Second St., Paterson, N. J.

Fabrics Finishing Corp., Paterson, N. J., The Federal Court has approved the sale of four of the mills of this company to a bondholders' committee.

Textile Patents

APPARATUS for making artificial silk thread. 1,788,484. William H. Furness, National Park, N. J. Assigned to Cellocilk Co., Philadelphia.

ARTIFICIAL silk, Multiple draw plate available to the manufacture of. 1,788,660. Henri Colomb, Tavannes, Switzerland.

BRAIDING bobbin device. 1,788,266. Adolph Zehnder, Birmenstorf, and Jean Kappeler, Baden, Switzerland.

CARD stripper for jacquard mechanism. 1,788,291. Thomas H. Halton, Philadelphia, Pa. Assigned to Thos. Halton's Sons, Philadelphia.

COTTON, Machine for cleaning seed. 1,787,740. Samuel Williams, Elk City, Okla.

DYEING and finishing machine. 1,789,093. Emile Bernard Bates, Leicester, England.

DYEING machine. 1,789,040. Archibald John Hall, Buglawton, England.

FABRICS, Dyeing of knitted and woven. 1,788,980. Charles Callebaut and Julian De Blicquy, Leeds, England.

JACQUARD knitting machines, Auxiliary needle helper for. 1,788,502. Sidney Worms, New Rochelle, N. Y., and Frank Hug, Brooklyn, N. Y. Assigned to Franklin Knitting Co., Inc., New York.

KNITTING machines, Attachment for spring beard needle. 1,789,058. William Tait, Francis Tait, Jr., and Charles A. Scott, Philadelphia. Assigned to Howard Hosiery Co., Philadelphia, Pa.

KNITTING machine, Circular. 1,789,002. Thomas Henry Jones, Woodthrope, England.

KNITTING machines, Reinforcing mechanism for rotary. 1,788,514. Augustin Gagne, Central Falls, R. I. Assigned to Hemphill Co., Central Falls, R. I.

LOOM. 1,787,491. Otto Primavesi, Dresden, Germany.

METHOD of manufacture of rayon filaments. 1,787,575. Arthur E. Guenther and Harry S. Toole, Buffalo, N. Y. Assigned to Du Pont Rayon Co., New York.

PILE FABRICS, and method of making the same. 1,788,989. Albert W. Drobile, Cynwyd, Pa.

PROCESS for the manufacture of a textile product, etc. 1,787,680. Robert Clifford Hartong, Akron, Ohio. Assigned to Seiberling Rubber Co., Barberton, Ohio.

RUGS, carpets or like pile febrics, Manufacture of. 1,788,340. Herbert Smalley, Lincoln, and Gilbert Hawoeth, Marple Bridge, England. Assigned to H. & G. Berts, Ltd., Lincoln, England.

SEWING machine. 1,789,249. James R. Moffat, Chicago, and Ralph H. Kelso, Rockford, Ill. Assigned to Union Special Machine Co.

SHUTTLES. 1,787,555. Richard Sedlatscheck and Frank Sedlatschek, Paterson, N. J. Assigned to United Reed & Harness Co., Paterson, N. J.

SPINNING machine, Centrifugal. 1,789,107. Joseph McGowan, Providence, R. I.

THREAD tension. 1,788,199. Frank W. Merrick, Dorchester, Mass. Assigned to Wonder Weave Co., Inc., Boston, Mass.

WARP-sizing machine. 1,788,196. Charles B. Johnson, Paterson, N. J.

Questions and Answers

We undertake to answer, free of charge, to the best of our ability, questions pertaining to textile matters received from any regular subscriber to TEXTILE WORLD. We do not undertake, however, routine analysis of yarn or fabric, or investigation involving unusual expense.

Inquiries should give the fullest information and data possible. In the case of damage to material, a sample should be sent. All inquiries must be accompanied by the name of the person inquiring, not for publication, but as evidence of good faith.

Letters expressing opinions or voicing criticism are cordially invited. These will be signed by the correspondent's name unless the letter itself contains a request that the name be withheld.

—EDITOR.

Dye Penetration in Knit Fabric

Technical Editor:

Enclosed you will find a sample of knitted worsted fabric which we dye in the piece in a dyeing machine. By stretching the fabric you will notice that the dye does not penetrate. Can you advise us how to overcome this? The dyeing machine we use is equipped with a pair of rubber rollers. Is there any agent we could use to make the dye more penetrating? In our dyeing we use dyestuff in conjunction with acid and glauber salt. (7437)

We have examined the knitted worsted fabric which you dye in the piece, and which after dyeing is not thoroughly penetrated by the dyestuff. We suggest that you give the material, just previous to dyeing, a treatment with a penetrating agent. Run the goods in a short warm bath for 10 to 15 min., using 2% of penetrant calculated on the weight of the goods. Then run the fabric into the correct amount of water for your dyeing operation; add the dyestuff, acid, and glauber salt; and allow the agent to remain in the bath during the dyeing. Tightly knit or heavy goods are quickly and more easily penetrated, and shaded or uneven dyeings are often eliminated. We are enclosing the names of some of the concerns making penetrating compounds which are suitable for use with the type of fabric you are dyeing.

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Yarns Used in Sweater Coats

Technical Editor:

We are wondering if you could advise us what yarn is customarily used in making worsted plated sweater coats. For example, in making men's all-worsted sweater coats to weigh from 13 to 14 lb., on both eight and ten cut, what count of worsted yarn is usually used? We understand that some mills use 1/15 and others 2/30, but we should like to have this information accurately.

On eight-cut latch-needle machines, to make 50% worsted and 50% cotton plated coats, what count of worsted and what count of cotton yarn should be used; both on eight-cut and ten-cut latch-needle machines, the coats to weigh 13, 14, and 15 lb.? Also, what count of worsted and what count of cotton yarn should be used; both on eight-cut and ten-cut latch-needle machines, the coats to weigh 13, 14, and 15 lb? Also, what count of worsted and cotton yarns should be used in making the same fabric, 25% worsted and 75% cotton? (7435)

In making all-worsted sweater coats of the weight and type in question, the yarn used would depend upon the quality of the garment. By using a 2/30 yarn, the quality of the garment would be higher, but the yarn cost would also be more. If, in using a 2/30 worsted, the cost were satisfactory, this would by all means be the better yarn to use, both for easier and better knitting, and for improved quality of the garment.

For the 50% worsted and 50% cotton coat based on the same yarn size, the counts should be 2/30 worsted and 20/2 cotton. Likewise, a fabric containing 25% worsted and 75% cotton would contain yarn of counts 2/60 worsted and $13\frac{1}{3}$/2 cotton.

The proper yarn size to use on any one cut cannot be stated definitely, but merely approximately, because of the variations possible in knitting. A certain amount of experimenting must be carried out in the mill to get the right combination of the variable factors. When this is accomplished, the desired weight and texture of the garment will result.

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Schreiner Finish on Sateen

Technical Editor:

Enclosed you will find a sample of 64 x 88, 37½-in., 4.70 sateen, showing finish desired. Will you kindly let me know how to duplicate this finish; particularly as to the face feel? (7429)

We suggest the following treatment to obtain the desired finish on 64 x 88 sateen: Treat the goods on a starch mangle with 20 lb. cornstarch, 40 lb. vegetable gum, and 80 lb. softener made up to 100 gal. Run over a tenter frame to dry and secure finished width. Recondition, and calender on a schreiner calender with 254 filling lines cut at an angle of 25°. Finally, run over a button breaker if the goods feels a little on the firm side.

◆

Finishing Sewing Thread

Technical Editor:

Can you advise us what to use to eliminate burning of our cotton sewing thread when passing through a high-speed sewing-machine needle? The thread seems to burn only when heavy work is done on a high-speed sewing machine, such as sewing overcoats and collars, also working on back pockets of men's pants. This is a very good test to give a sewing thread, as the cloth is pulled back and forth and heats the needle to the extent that it cannot be touched by the hand. We use yarn of a good quality which has the required strength of that number (40/3).

The finishing formula which we are using at present is as follows: 3% potato starch, 2% paraffin wax, and 2% amber soap flakes. To this mixture we are adding small amount of a gum arabic compound. After finishing, the yarn is put into an extractor and then it goes to the drying room. When the thread comes to the last process—the cone machine—it passes

through wax. We understand that a great many thread finishers are having trouble with thread breaking on high-speed machines, but believe that some manufacturers have overcome this difficulty.

We also should like a formula for mixing size for securing a silk finish on cotton thread, both coarse and fine. *(7400)*

We believe you are using too much potato starch and not enough paraffin wax. If you will use 4% of paraffin wax and 2% of potato starch, along with 2% of amber soap, we are of the opinion that you will find the thread more suitable for high-speed machines. We also suggest that you leave out the gum arabic, as this causes too much friction in passing through the eye of the needle. Some thread finishers are passing the thread over a hot plate on the winding machine and adding paraffin wax in a hot liquid state to the thread. However, this method of hot waxing seems to be more or less a secret, but we understand it is being done satisfactorily.

For a silk finish on sewing threads, we recommend mixing in a 50-gal. barrel, with live steam pipe and either a hand or mechanical mixer, 40 lb. of potato starch, 5 lb. of soluble wax, and 2 lb. of soap. Boil and mix thoroughly for ½ hour. This solution may be used full strength or diluted according to the condition of the thread. For natural threads you will find that you will need heavy size and for processed threads you will need thin size. Also on the coarse and fine counts you will have to vary the thickness of your size.

We have referred your inquiry to an experienced thread finisher in New England and his reply is as follows:

"Burning and breaking of sewing thread on high-speed machines is not altogether the fault of the thread, but is due to friction caused by high-speed sewing machines in puncturing the heavy material. In this case I suggest using the best quality of Sak thread and properly lubricating the thread.

"The writer believes that the formula you are using is not suitable for this work, as some of the ingredients are causing friction rather than acting as a lubricant for the thread. I would recommend using 4% of coconut oil, 4% of commercial olive oil, and 4% of paraffin wax. This formula is for 100 lb. of thread. You should use low-melting point paraffin wax (123° to 125° F.). Melt this in 10 gal. of water with an addition of 2 oz. of bicarbonate of soda and 2 oz. of olive-oil soap. Add this to the finishing bath at 180° F.; work in the bath for about ½ hour and dry without rinsing. During the drying operation, do not allow the temperature of the drying room to rise more than 3 to 5° over the melting point of the wax which you are using; otherwise you will destroy the properties of lubrication. After the yarn is dried, wind on a Foster or Universal with as loose tension as possible. In place of winding the thread through paraffin wax, use two felt wicks saturated with commercial olive oil. By so doing you are applying further lubrication, as the thread passes between these two wicks with the spindle revolving. Oil, of course, would have to be applied to these wicks in case they became in any way dry.

"In cases where heavy rubber-covered material has to be sewed, it has been necessary to submerge the cones or tubes in the bath of commercial olive oil for several hours and allowed to stand over night before the thread could be used for sewing.

"A formula for glazed finish in sewing thread is as follows: In a 50-gal. barrel mix 1 lb. glycerin, 12 oz. beeswax, 8 oz. paraffin wax, 6 oz. olive-oil soap, 4 oz. gum tragacanth, 2½ lb. coconut oil, 9 lb. potato starch, 7 lb. sago flour, 1½ oz. bluestone, and 1½ lb. Irish moss properly boiled and strained. This you will find to be an excellent thread finish which can be diluted by adding water if the finish is too hard for your requirements. This formula will take care of either soft or heavy finish. Of course, you must bear in mind that this formula must be put together properly; otherwise you will not obtain results. Also the dressing of the yarn must be properly taken care of, such as draft, brushing, etc. This, however, is up to the foreman of the dressing department."

THOUSANDS of inquiries are handled annually by the Technical Editors. In order that as many readers as possible may benefit from this service, we select problems of general interest for publication each week.

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Rings and Oil Spots in Hosiery

Technical Editor:

We are enclosing two stockings showing rings which are marked with a piece of paper attached at the point of defect. It appears as though the cause of these rings is either that the silk is less than four strand, or that the high twist for some reason or other is disturbed. The silk used is Special Crack XX, thrown into four thread with twenty turns per inch. After you reach a decision as to just what is the matter with the silk, we should appreciate your opinion as to whether the trouble originates in the throwing or the knitting.

We are also enclosing a stocking showing spots. These spots occur from time to time and we have been unable to trace them down. In degumming, 10% of Trianol S and 2% of Trianol P are used. The goods are entered at a boil, boiled 45 min., flushed, again brought to a boil, rinsed twice in cold water, extracted, shaken up, and dyed. In dyeing, 2% of TriSulphoil and 5% of glauber salt are used. *(7423)*

We find that the rings are caused by short sections of excessive twist in the silk. This condition naturally reduces the diameter of the assembled threads of silk, and at the same time, causes a different reception to dyes and light rays. It is noted that in one of the stockings a broken strand of silk is in evidence. This no doubt was caused by the excessively high twist, since the silk at point of ring—even with one strand broken—shows much greater twist than the courses adjoining the ring. The defect is purely a throwster's trouble.

The spots on the goods are oil spots; and the most logical conclusion to make, based on the information before us, is that they came from the dyeing machine. Frequently oil in dyeing machines is due to oily goods from the knitting room or to careless oiling of the dye-

ing machine. We believe that if you will carefully inspect your dyeing and degumming baths, you will find grease eyes floating around on the top. We do not condemn the process of degumming and dyeing, but find that many dyers prefer Trianol D to either Trianol S or P. Trianol P is supposed to assist in overcoming difficulties from free grease in the dyebath, and is probably being used for that purpose. We feel that a better method is to keep the gray goods reasonably clean from mineral oil and greases and to see that the dyeing machine is kept clean. We also suggest that you have your water supply checked for hardness. Trouble from grease spots is far more prevalent where hard water is employed in degumming and dyeing.

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Analyzing Cotton Yarn for Grade

Technical Editor:

Can you inform me as to what procedure I should use in the analysis of cotton yarns to determine both the variety and grade of cotton which was used in the original? I am told that a microscopic examination is advisable, but I want a more simple method. (7449)

For analyzing cotton yarn for grade the most essential thing needed is experience in the grading of cotton. When yarn is analyzed for this purpose it is necessary to take a great deal for granted.

Let us consider, for instance, a 30s yarn. First untwist short lengths so that the fibers can be pulled or separated easily. This will show the average length of fiber and the blend. Now let us assume that the yarn is carded. If it has what is known as pepper dirt or leaf in it, and is somewhat grayish in color, it may reasonably be assumed to have been made from a low middling cotton. If it has a slight brownish tinge, it may with justification be classed as good ordinary. If the tinge is decidedly brownish, the grade must be assumed to be lower. The average combed yarn contains cotton of middling grade and above—most often strict middling.

The natural color of the yarn as taken from the spinning frame or from gray cloth will tell a big story, providing the analyzer is familiar to some extent with the classing, grading, and stapling of cotton. Many cotton classers can tell by the feel of cotton from the bale, just where it was grown. It is also true that, in the analysis of yarns for variety and grade of cotton, experience with many kinds of yarns and stocks can be put to good use. Egyptian cotton has its own color, but we have seen yarns made up of Egyptian cotton waste and American cotton analyzed incorrectly, due to lack of knowledge pertaining to Egyptian and American tinges.

◆

Wrinkles and Creases in Closely Knit Fabric

Technical Editor:

We should like your assistance with a little problem which has been giving some annoyance in our kiering and bleaching process. Our closely knit balbriggans and cooper ribs emerge from these processes full of wrinkles or creases which subsequent processes, including hydraulic pressure, fail to remove.

Our cloth is kiered in a Jefferson vomit kier. We use zeolite softened water and boil at 15-lb. pressure for a period of six hours. Ingredients previously dissolved and injected into the kier are as follows: 2% caustic soda, 2% soda ash, 1% trisodium phosphate, and 1% sodium bisulfite. After boiling, the kier is rinsed with cold water. For souring, we use muriatic acid; and for bleaching, sodium hypochlorite made in our own bleach house from caustic soda and liquid chlorine.

We are enclosing a cutting of cloth which has been dried directly from the kier; also another cutting dried after bleaching. Our cloth is dried by being run on to racks and left hanging in an enclosure. It is dried at a temperature of about 130° F. It is then taken out, steamed, and mangled between heavy, heated calander rolls.

It appears almost impossible to remove these wrinkles once they become set in the kier. We have omitted the soda ash and increased the caustic, but no improvement was effected. We have also tried re-wetting the cloth. This does not altogether remove the trouble. If we take the same cloth, omit the kier boil and bleach with peroxide, we get a much smoother piece of fabric.

When you have had time to examine our samples, we shall appreciate any suggestions you can offer which might effect prevention of these creases in the kier; or if this is impossible, their elimination by subsequent operations. (7425)

It is our opinion that the method and chemicals you are using in kier boiling are satisfactory; in fact, nothing in your entire bleaching method would tend to cause these wrinkles. The one place to remove them is in drying. Probably the best drying system for this is the pipe-and-spreader type, because the fabric can be stretched on the spreader just enough when wet to remove the creases, and being held in this position, dries with the wrinkles removed.

If you do not have this type of drying apparatus, we suggest that you try the following method: After extracting the goods, run them through any steamer or calender you may have where the cloth can pass over a spreader. This will straighten out the fabric. Next hang the cloth carefully on your racks, and allow it to dry, but not bone dry. Next pass it through your steamer, giving it all the steam you can, and then immediately pass it through your heavy heated calender rolls, which will finish the drying of the cloth and give a smooth surface. In this way the wrinkles and creases should be reduced to a minimum.

◆

Finishing Wood Hosiery Forms

Technical Editor:

With reference to the finishing of wooden forms, discussed on page 55 of your issue of Jan. 3, the writer has had to finish many lots of new boards and has tried various ways. The best method he has found is first to heat the board in the dry box or room, dip it in water, and put it back in the dry room. This brings up all the grain. Smooth off with medium and then fine emery cloth. This works better than sandpaper. Heat again and rub with paraffin, which soaks into the wood. Do this three times in succession and you will have no trouble with boards getting rough.

G. W. Sheeley.

New Machinery & Processes

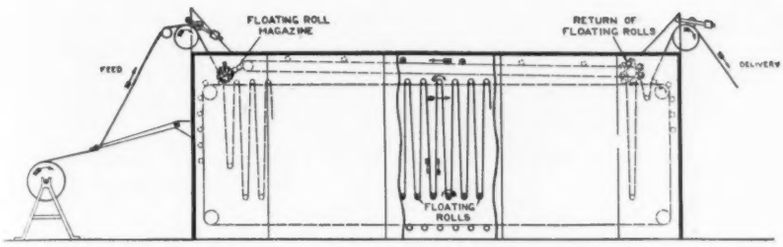


Fig. 1. Side view of conveyor showing mechanism as applied to a dryer

Improved Drying and Processing Machine Combines Festoon and Roller Principles of Conveying

By A. O. Hurxthal

Vice President and Director of Engineering, Research, and Development, Proctor & Schwartz, Inc., Philadelphia

A NEW machine for drying and other processing of a variety of continuous sheet or piece materials has been announced recently by Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia. This equipment—by combining the festoon and roller principle of conveying such materials during air-drying, cooling, humidifying, or similar processes—offers advantages which heretofore have not been available. Originally developed as an air dryer for writing paper, it has been found that the machine has wide applications in processing textiles and other materials handled in sheet or piece form.

In handling sheet materials the festoon principle and the roller principle have been in general use for some time. Now, however, an improvement over both these old principles of conveying has been achieved in a novel combination of the two with a resulting new principle which is at once festoon and roller, and which retains the good points of each. This conveyor system is embodied in a compartment-type machine shown in Fig. 1. In this new dual system of conveying, the predominating characteristics are those of the older festoon system. The material is actually carried in festoons; but it also moves continuously over the festoon-supports, threading its way up and down towards the delivery end of the machine quite independently of the main movement of being carried. In this way stick marks are avoided. In addition, the rollers travel through the machine and form the supports for the festoons.

Of the two motions combined under this dual principle, only enough of a rolling motion is used to keep the festoons from hanging in a fixed position throughout the process. The main movement of the material, as said before, is that of being carried in festoons. Actually, for each 100 ft. of travel of the material, about 95 ft. is carried forward and only 5 ft. passes over the rolls.

Reference to the accompanying illustrations will help towards a quick comprehension of this dual principle. It will be seen that the sticks or girts of the ordinary festoon conveyor are supplanted by rotating rolls of small diameter which are supported at their ends by conveyor chains having suitable bearings to receive the journals of these small rolls. A small gear on one end of the roll journal (Fig. 2.) engages a rack which causes the roll to rotate slowly while carrying its festoon. This prevents the material from resting in a fixed position over the roll.

The single feature of rotating rolls for supports of the festoons, however, is not sufficient to attain the de-

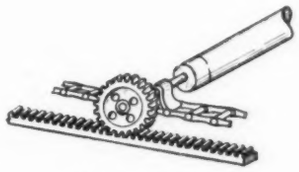


Fig. 2. Top roll

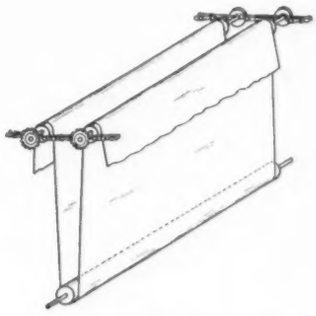


Fig. 3. Floating roll

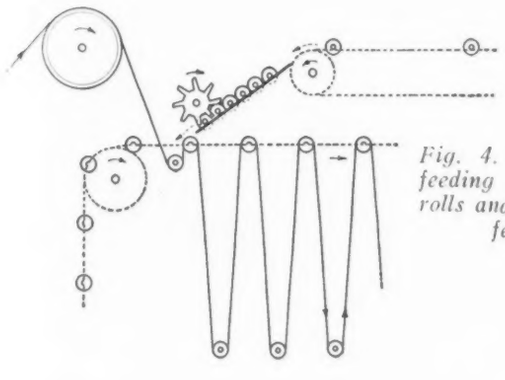


Fig. 4. Automatic feeding of floating rolls and forming of festoon

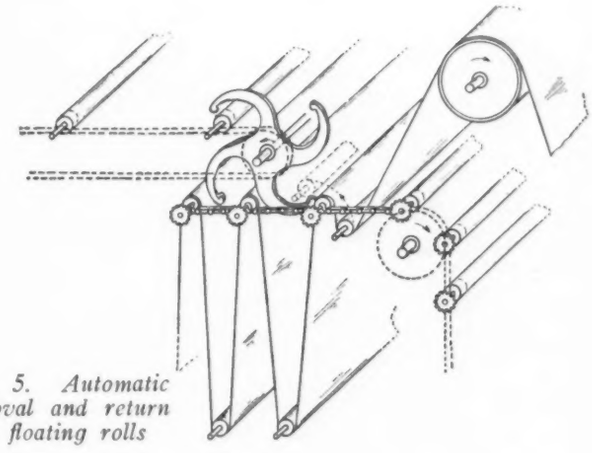


Fig. 5. Automatic removal and return of floating rolls

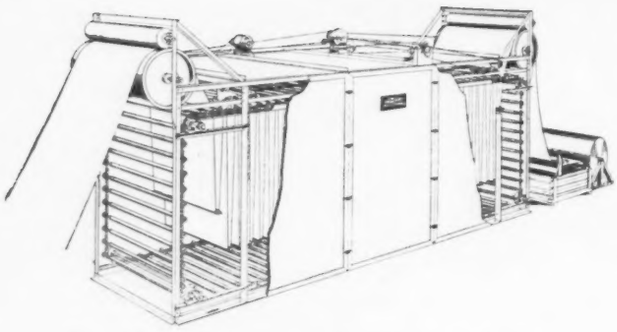


Fig. 6. The complete unit may be tied up in range with preliminary or subsequent processes

sired result, because there is not enough traction between the material and the rolls for a uniform travel of the material over the rolls. Especially this is true of materials that enter the machine in a soft and flexible condition but stiffen later in the process. Under such a condition the rolls would turn without advancing the material at a uniform rate, and this would quickly result in unbalanced festoons and a number of possibilities of trouble. To overcome this difficulty, a "floating" roll is introduced into the bottom loop of each festoon in its formation. This "floating" roll (Fig. 3) performs four important functions: (1) It facilitates the formation of the festoon between the carrying rolls. (2) It prevents buckling and wrinkling of the material in the formation of the festoons, their passage through the machine, and their taking up at the delivery end. (3) It places sufficient tension on the material to provide for its uniform movement around the upper or carrying rolls regardless of forces tending to prevent this. (4) It allows the desired uniform shrinkage of the material because of uniform tension never exceeding the weight of the floating roll, which, in turn, can always be regulated according to the particular requirements met.

The size and weight of the floating roll are matters of choice, according to the material handled. The suitable roll may be of heavy, solid shafting; or, the other extreme, of light cardboard tubing. Sometimes solid wooden rolls $\frac{3}{8}$ in. in diameter are used.

A simple demonstration of the purpose and value of the floating roll in this system of conveying can be made by the reader at his desk: Take an ordinary sheet of writing paper and a small stick. Dampen the paper sligthly. Place the stick on the paper, parallel to the ends. Next, grasp the paper firmly at its ends so as to form a loop between your two hands, with the stick resting in the loop. Then raise and lower the hands alternately, so that the stick rolls back and forth from raised end to lowered end. It will be seen that the damp paper will rise and fall freely; in other words, will run around the rolling stick freely without wrinkling or buckling. Remove the stick and try to repeat the same motion of the paper without it. The paper then will show a decided tendency to buckle. Replace the stick and the buckling will disappear, allowing the paper to run freely again.

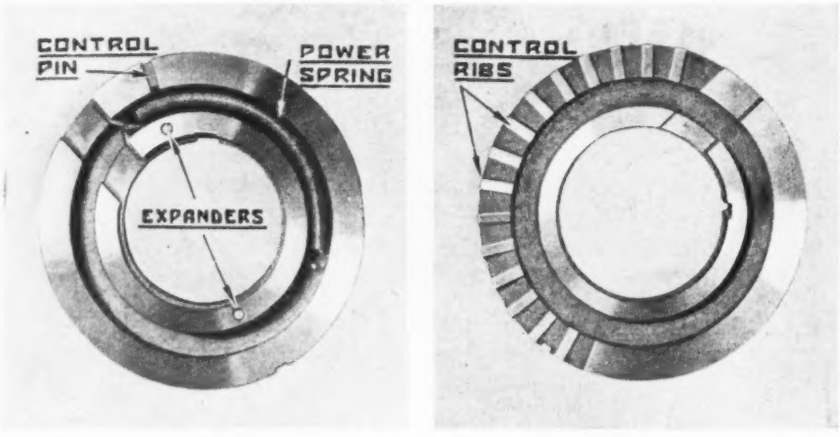
The performance of this machine which embodies this unique conveyor system, is entirely automatic from the feeding of the material at one end to the delivery at the other end. Synchronizing devices are provided to compensate for any amount of shrinking of the material. The floating rolls are automatically fed (Fig. 4) under accurate timing, into the loops from a magazine; also these rolls are automatically removed from the loops at the delivery end (Fig. 5) and returned to their magazine. The whole system of conveying (Fig. 6) is easily tied up in range with practically any preliminary or subsequent process.

The only limitation of the machine is that its use is confined to materials of such a character that both sides of the material can come in contact with the rolls without detrimental effect, because always one side of the material comes in contact with the carrying rolls and the other side comes in contact with the floating rolls. Beyond this limitation, the promised uses of the machine are many and varied.

As a drying machine, the unit is equipped with a system of fans and heating coils to provide the necessary circulation of warm air for efficient drying. The air-circulation-system units can be so arranged that the direction of air currents may be up or down or across the festoons.

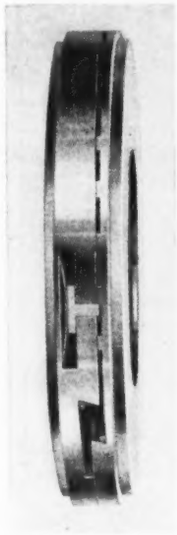
Automatic Compensator Maintains Bearing Adjustments

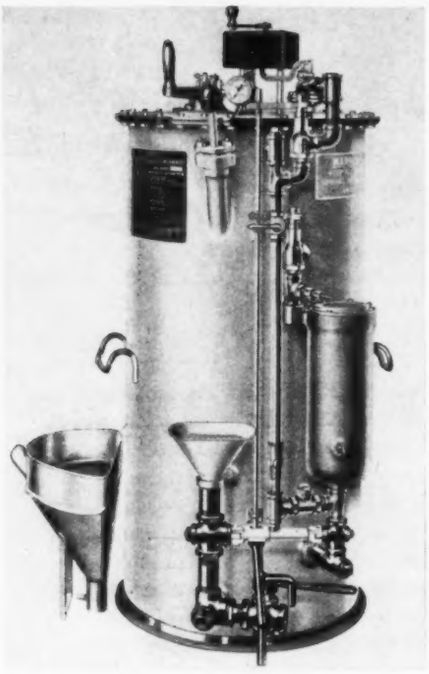
DEVELOPMENT of an automatic compensator for maintaining constant clearance in bearings has been announced by Wyrick Engineering Co., Wyandotte, Mich. This new device, which is known as the Wyromatic Compensator, is expected to have wide application in preventing pounding, vibration, and scoring of bearings, due to improper adjustment. In addition, use of the compensator eliminates the necessity of machining to the close limits now specified and permits lighter bearings to be employed. While the compensator is made in several forms, each type embodies substantially the same principles of action as the others and is made as a self-contained unit. The compensator is so designed as to cause the co-action of two members to increase their joint dimension of thickness, thus compensating for the increased bearing clearance. Since the action is governed wholly by the clearance, possibility



Two cams, one smooth and the other slotted, are essential features of the automatic compensator

Compensator with case removed to show relation of control pin with control ribs





Medium-pressure acetylene generator

of adjustment beyond the desired minimum clearance is obviated.

The major parts are two mating helical cam-faced members, which when placed together, will increase or decrease their joint cross-sectional dimensions if rotated in opposite directions. These two members serve the space-filling requirements which are necessary as wear occurs. A power spring, which is attached to both cams when assembled, provides the power to rotate the cammed members whenever this action is required.

Two hardened steel balls with expansion springs in back urging them outward to exert a pressure against the inner surface of the slotted cam when the cams are placed face to face, are utilized as expanders. This action insures separation of the two cam-faces as, through wear, increased space occurs.

A T-shaped control pin is ground to project beyond the face of the smooth cam, in which it is assembled, a distance equal to the maximum clearance required. When the cams are in place, the control pin projects into one of the slots of the slotted cam and engages one of the ribs of the latter, insuring against any rotational action between the two cams unless sufficient space is allowed to permit the cam-faces to separate a distance equal to the protruding portion of the control pin. The control ribs of the slotted cam are spaced to insure the desired dimension of readjustment required at each adjustment period.

The compensator is further provided with a locking seal. This seal holds the cams in their reduced-dimension relation until the compensator is properly assembled in working position between two spaced parts, after which it is removed. Then the compensator acts merely as a precision spacing washer; readjusting action taking place only at intervals when, through wear or other factors, the combined clearances of the assembly reach the predetermined maximum.

The various members co-act in the following manner: Inserted between two spaced parts with the compensator, reduced to minimum dimensions, the power spring urges opposite rotation of the two cammed members, and such rotational action is restrained by a control rib which obstructs pasasge of the control pin; the expanders continually urge separation of the cam-faces; and as wear takes place and space is provided, the cams gradually separate until the control pin has clearance to pass the obstructing rib. Then the power spring enforces opposite rotation of the cams, and this action increases the joint dimensions of the cammed members, closing the space between the cam-faces, thereby compensating for the increased clearance. The control pin is again obstructed from passing the next rib in the series, and the compensator unit once more acts as a mere spacing washer until wear permits another readjustment cycle.

Acetylene Generator

TO MEET the demands for a stationary or portable acetylene generator which can be used in connection with either medium-pressure or low-pressure welding and cutting blowpipes, Oxweld Acetylene Co., 30 East 42nd St., New York, has developed a medium-pressure acetylene generator. This generator is designed for any type of welding or cutting operation and can easily be carried from place to place on a truck or wagon. It incorporates a number of new features designed to give safety, dependability, and minimum pressure fluctuation.

A self-cleaning carbide valve is rotated by means of a spring clock motor which, in turn, is governed by a diaphragm motor control. A pin in the stem above the valve prevents bridging of the carbide and consequently possible stoppage. Pressure adjustment is easily made by means of a thumb-screw on the motor control. Fluctuation during normal operation is said to be less than 1 lb. per sq.in.; and even under severe load, the carbide feed is regulated to limit after-generation to a maximum increase of 1 lb. per sq.in. This close regulation permits operation of the generator close to the limit of 15 lb. per sq.in., without loss of gas through the relief valves when the blowpipes are turned off. If for any reason both the motor brake and relief valves fail to function, the motor locks at about 18 lb. per sq.in. pressure, thereby stopping the carbide feed. Should a broken line or leak of any kind cause the pressure to drop to zero during operation, the motor stops and will not start except by hand.

The normal rated capacity of the generator is 30 cu.ft. of acetylene per hour. The Underwriters' Laboratories have permitted a double rating, making a maximum capacity of 60 cu.ft. per hour, which is ample for any welding or cutting operation. The carbide capacity of this generator is 30 lb., and the quarter size ($\frac{1}{4}$ x $\frac{1}{12}$ in.) carbide is used. A special funnel, which is held in place on the generator, is provided for filling the generator.

Foam-Preventing Agent

NO FOAM, a new product devised to increase the surface tension of liquids and thereby minimize frothing and foaming, has been announced recently by Glyco Products Co., Inc., Bush Terminal Bldg. No. 5, Brooklyn, N. Y. This product is believed to be especially applicable as an addition to printing pastes where excessive spreading of the color in printing is undesirable. No-Foam is a water-white liquid having a characteristic fatty odor. It is insoluble in water, but soluble in most organic solvents. It boils between 160 and 200 deg. C. It is a solvent for oils, greases, resins, etc.

Durene

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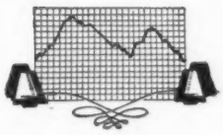

General Business Stability Appears Nearer

Lower Prices to Consumer Should Begin to Benefit Textile Trades, Says Dr. Haney

Summary: **Though general business continues to decline, the recession is now less rapid and signs of approaching stability appear. The textile trades may benefit by lower clothing prices. Estimated cotton mill earnings seem better than mill stock prices would indicate.**

•

The analysis and forecast by Dr. Lewis H. Haney, Director, New York University, Business Research Bureau, which regularly appears on this page, considers various branches of the textile industry from week to week. The conclusions reached in the Analyst are mostly forecasts and generally apply to a time two or three months ahead. The Analyst is based on statistical data and does not reflect temporary trade sentiment.

THE favorable factors in the business situation at present are as follows:

1. Machine tool orders increased in December.
2. The unfilled orders of U. S. Steel Corp. increased.
3. The bond market is a little stronger in response to low money rates.
4. The decline in building permits was checked in November and December.
5. Basic commodity prices show a little greater stability.
6. The current spurt in the silk industry.
6. Cotton cloth statistics continued fairly favorable in December.
8. Production in most industries is so far below normal requirements that progress is being made toward restoring a balance between supply and demand.
9. Stocks of copper, zinc, and silk have been somewhat reduced.
10. A fairly liquid mercantile position; low brokers' loans; low "money rates."

The unfavorable factors may be summed up as follows:

1. A continued decline in commodity prices, even raw materials being off a little.
2. The P-V Line reacted a little in December and is below normal.
3. Foreign trade continues depressed with reduced exports.
4. A sharp decline in employment and payrolls.
5. Continued decline in farm prices and purchasing power.
6. Building activity reached a new low in December.
7. Retail trade declined in December, the average daily department store sales being 12% under a year ago.
8. Large stocks of many commodities still exist (e.g., copper, lead, zinc, leather, oil, cotton, wool, silk, wheat).
9. Much frozen credit, excessive collateral loans, numerous bank and business failures.

Unfavorable Factors Still Predominate

The most favorable factors are the indications of the progress made in liquidation, curtailment, and a restoration of equilibrium between supply and demand. This is the fundamental thing. It is a slow process, but in it lies the only sound remedy. Certain barometers pointed up in December, but these are highly erratic and their significance is still uncertain. So it is with machine tool orders; temporary upturns in this barometer are not conclusive and current reports from the trade are not yet encouraging. As to unfilled steel orders, the December increase was almost entirely due to low shipments. It is better to find unfilled orders rising than falling, but reports concerning new business in the iron and steel industry do not warrant the conclusion that the rise in unfilled orders marks a turn. It is a hopeful indication that building permits have ceased to decline, but actual building activity continues extremely depressed and we note that contemplated new construction as reported by F. W. Dodge slumped in December. However, the permit figures often lead in the building cycle. As to the spurt in the silk industry, there is danger that too rapid a rise in prices and manufacturing may lead to a reaction.

But the signs of a downward turn in stocks of zinc and copper are important. They mark the beginning of the end of the business recession. The stocks are still so large that no immediate response in the metal markets is to be expected, these remaining unsettled; but it is very hopeful to find the storage no longer accumulating. It suggests early stabilization in prices.

The chief unfavorable factors continue to be the decreased purchasing power of large groups of consumers, due to lower factory payrolls and farm income, and evidences of the incompleteness of the liquidation of credit. Total bank loans are still large in comparison with deposits or with current business requirements. The chief factor here is found in the security loans of the banks, as commercial loans are low and the rapid decline in brokers' loans has carried them down to 1924 level. Evidently the banks are still carrying a heavy load of frozen credit in the shape of loans on stocks and bonds.

Price Trend Still Down

The Bradstreet price index dropped sharply in December and this is largely responsible for a little reaction in the P-V Line barometer (a ratio of commodity prices to physical volume of trade). This barometer indicates that

QUALITY
STRENGTH
UNIFORMITY
DEPENDABILITY

This is your guarantee when buying Boger & Crawford mercerized yarn

4/2 to 120/2
Combed Peeler

50/2 to 200/2
Combed Sea Island

Mercerized—Natural—Bleached—Colors

Finest Mercerized Yarn Spinners in America

BOGER & CRAWFORD

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PHILADELPHIA, PA.

supplies of commodities in general are too large to allow their free movement at current prices, consequently prices tend to sag.

At this writing a majority of commodity price changes from week to week continue to be in a downward direction. This is true, moreover, of a select list of basic commodities which are most sensitive to the underlying price trend—such as hides, hogs, lard, zinc, and wool. The most notable recent exceptions are silk and steel scrap. But the one appears to be due to a speculative move, and the other to be an irregular seasonal movement. There is more and more general agreement that prices of finished goods and retail prices are likely to show further declines in order to bring about a more normal adjustment between them and (1) the prices of raw materials and (2) the lower purchasing power of consumers.

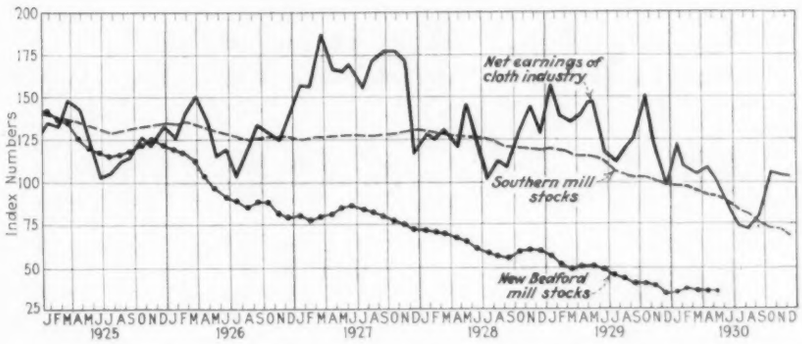
On the whole, the unfavorable indications are still the more positive and suggest a little further recession. But there are growing indications that the recession is in its last stages and increasing signs of stabilization are to be expected as the spring draws near. If business can be left free to allow normal readjustments between supply and demand, the cure will be worked in a few months. This recession has been greatly prolonged and intensified, first by artificial stimulation of inflationary excesses at the peak in 1929, and then by attempts to hold up prices and production and to make money rates artificially low.

Retail Clothing Prices Decline

The Analyst is again impressed with the significance of the relatively large decline in retail clothing prices. The only sustained attempt to measure such prices is that furnished by the National Industrial Conference Board in its index of the cost of living. This presumably covers the most necessary staple articles of clothing, including textile articles, hats, and shoes. It is, therefore, not as closely representative of textiles as could be desired, but obviously has some bearing. This index of total living costs in December had fallen 7½% below a year ago. The clothing group, however, had fallen 11.8%. The total cost of living was 50% above 1914, while retail clothing prices according to it averaged 49.2% above 1914. This indicates that necessary clothing expenses have become a smaller percentage of the average family's budget and that people are, therefore, in a position to buy more clothing—at least when their purchasing power picks up.

It seems probable that the textile markets have suffered severely from 1923 on from the relatively high cost of clothing. (Probably this has had something to do with the prevalence of "scant" styles). Now that fibers are cheap and some reduction in retail clothing prices has occurred, economic forces should favor a larger consumption of clothing, including textiles.

This thought suggests a desirable goal for the textile industries in the current general readjustment, namely, they should endeavor to stimulate demand not only by advertising style goods, but also economic values. We may well remember that volume brings lower production costs. Many basic raw materials are now on a pre-war price basis. Other expenses are being reduced. The effort to "trade up" has apparently been contrary to the trend of the times. It is to be recommended that the textile trades cooperate to get clothing promptly adjusted to a fair basis with relation to raw material costs.


Net earnings of cloth industry
Southern mill stocks
New Bedford mill stocks
Index Numbers
200
175
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125
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COTTON MILL EARNINGS AND SECURITY PRICES—Net Earnings in Cotton Cloth Industry—Computed from the cost of raw material, labor, fuel, etc., the price of finished goods and the volume of production (New York University, Bureau of Business Research). New Bedford Mill Stocks—Average price 25 New Bedford cotton mill stocks (New Bedford Standard). Southern Mill Stocks—Average price 25 Southern cotton mill stocks (R. S. Dickson & Co.)

Earnings High Compared With Cotton Mill Stocks

Replacement margins of cotton manufacturers were irregular in December. Yarn prices declined less than raw cotton, and spinners' margins therefore gained slightly, while gray goods prices fell more than raw cotton. There has recently been some weakness in the yarn and gray goods markets. But if allowance be made for the usual lag between the mill's purchase of raw cotton and its manufacture, and also for current labor and fuel costs, the actual margins apparently earned were probably the highest at the end of 1930 since 1927. The trouble is that this position has been attained only with the help of a very low *volume* of production, and consequently the total *value* of production is low and over-head expenses can hardly be favorable. Therefore, it seems probable that average mill earnings in the last quarter were no better than in the first quarter of 1930.

When all is said, however, the margins and earnings of cotton manufacturers appear to be somewhat better than would be indicated by the average price of mill stocks, and the rate of decline in common stocks of cotton mills was less rapid in the last quarter than in the first three quarters of the year.

Cotton Shows Steady Tone

Traders are Awaiting Trade and Crop Developments

RATHER a better tone developed in the cotton market on the decline which extended to 10.10 for March contracts early in the current week. Trade buying increased around this level and it was said that mills were showing more disposition to fix prices, while the failure of the Lancashire labor news to bring in additional selling was evidently a disappointment to speculative shorts. At any rate trading which had become very quiet on the decline, grew more active and the market showed rallies on covering and trade buying.

Except for the lockout of weavers in Lancashire and prospects for curtailment in the British spinning industry as a result, there would appear to have been no material change in the general situation, or in the uncertainties confronting the cotton trade, during the week. Rather a steadier tone seemed to be developing in the market for bar silver, and there were reports that Japanese mills were getting some new business as a result of the Lancashire situation. These may possibly have been reflected in the Japanese buying which made its appearance in the market here on Tuesday, while there was also some buying for Continental account. On the whole, however, there has been nothing either to strengthen or discourage expectations of a gradual improvement in

Style fabrics must keep pace with fickle fashion

Styles change rapidly, without rhyme or reason. If style fabrics are to earn full profit they must follow right on the heels of market trends. Speed is essential, and weavers or knitters who spend just a little too much time in getting the right yarns often miss their opportunity.

Quissett is attuned to the lightning changes of style. Many times we have supplied special yarns within 24 hours . . . and have enabled weavers to put their goods on the market ahead of all others. Crepe yarns, cotton backed sateen yarns, twister cords, slub stripes, Quitex Spun Rayon, and a host of other special yarns to suit the fabric you're planning—all of typical Quissett quality, uniform and right in twist.

Utilize this fast service on special yarns. It will give your style fabrics a strong, strategic position on the market. Write for samples in any put-up.

Quissett Mill
New Bedford, Mass.

Wm. M. Butler, Pres.
Edward H. Cook, Treas.
Thomas F. Glennon, Agent

QUISSETT MEANS QUALITY

Our Quotations based on
Cost + a reasonable profit

QUISSETT
Cotton Yarns
AND
Quitex Spun
Rayon

business such as have been evident in the market since the beginning of the new year, although improvement may be coming a little more slowly than hoped for and there has been nothing more definite with references to acreage prospects. The market, of course, is looking for its inspiration, so far as long range views of prices are concerned, to these two factors. Some consider that the development of trade will be most important; others think that the trend of end-season prices will depend most largely upon the shaping up of coming crop prospects, while the truth probably is that a comparison of prevailing ideas as to world's requirements with the crop will be the actually determining factor.

All reports reaching here from the South indicate prospects for reduction in acreage and influential campaigns are under way to insure this object. Cotton traders, as a rule, place little reliance upon campaigns for reduction, believing that acreage is determined by the financial position of the growers and the price of cotton as compared with possible substitutes. These factors are believed to point to a smaller acreage this spring, but whether the decrease will exceed 8 or 10% is considered problematical. This would not be regarded as sufficient to insure a higher market in view of the prospective world's carry-over at the end of this season, unless it were coupled with an unfavorable growing season and a reduction in yields per acre. One of the prominent cotton statistical bureaus believes it quite evident that a crop of 11,000,000 bales will be sufficient in any event and too much unless consumption is restored to something like normal, and, assuming an average yield per acre, calculates that a reduction of 10% would indicate a crop of about 13,000,000 bales; 15%, 12,300,000; 20%, 11,600,000; 25%, 10,900,000 and 33% 9,700,000. Another of the prominent private crop reporting services says correspondents reports together with knowledge of southern economic conditions lead to belief that the cut in the 1931 acreage will fall short of the reductions in 1921 and 1927, the maximum of which was 15%.

Business in the spot markets has been quiet. Sales of small lots have been reported but at such a low basis that they have been readily absorbed against sales of later months at the premiums prevailing in the futures market. A few additional notices are issued each day against January contracts here but they are being readily stopped at the ruling discounts.

Demand Turns Toward Low Cotton

Memphis, Tenn., Jan. 19.—Demand for low grade short cotton, mostly not longer than 1 in. appeared to improve during the week but staples, if anything, were duller. High grade 1⅛ in. and longer staples are not hard to sell, but the continued neglect of 1⅛ in. is reflected in an easier basis, about 25 points, while basis on all other cottons remains about unchanged. At the same time, owners of staples express the belief that, owing to the drouth in Arkansas and the Mississippi delta, the position of staples will improve materially before the end of the season.

Total sales of cotton in this market during the week were only 12,282 bales against 14,460 the previous week and against 17,769 the same week last year, making 480,778 bales for the season against 797,384 last year. Demand was mostly of the hand-to-mouth kind, but merchants are hopeful that seasonal activity expected in goods markets toward the end of this month will be reflected in better demand for cotton early in February. Inquiry for export is almost negligible; the Lancashire lockout made little impression here.

So little has been done in the way of new crop preparations that it is impossible to form an idea of probabilities. Memphis Cotton Exchange has gone on record for an acreage reduction of 33⅓% and has a committee to cooperate with other agencies working for acreage reduction. A device for conditioning seed cotton will be demonstrated this week. It is claimed for it that it will just about eliminate weather as a factor in gathering cotton since cotton picked in the rain or immediately following rain may be safely and satisfactorily ginned without delay.

Cotton Yarns Show Stability

Raw Material Low; Spinning Margins Narrow

JANUARY has been disappointing to date in cotton yarns. Trading has expanded slightly above the low level reached in December but not to the extent hoped for. Spring buying has not yet made its appearance in volume. There were, however, a number of favorable signs in the market this week.

Small Orders Predominate

While total volume of business passing to spinners has not been large, it is noticeable that more manufacturers are in the market for small quantities. This is in contrast to conditions last October. At that time a relatively few bought large amounts for forward delivery. There is no argument at present concerning price and the impression is given that manufacturers are only waiting for a movement of goods before buying yarns.

Short-selling and cutting of commissions are not weighty factors at present and there is little difference between spinners' and buyers' ideas. Sales of 20s-2 warps, average quality, have been reported at 20c. to 21c. and it is possible to place business with spinners within this limit. Majority of spinners ask 20½c. to 23c. for yarn of this grade. The same condition exists in other counts; knitting yarns are selling on a spinners' price basis.

There are a few large buyers who are placing contracts for February, March, April and May, but these are in the minority. Average buyers are taking only a few packages for immediate consumption. One of the largest selling houses says that average sale is for less than 5,000 lb.

Braiders Have Bought

Braiders have been one of the most active buyers lately, and they have taken fair sized contracts this week. Most of this yarn has been of tinged stock and at prices that are under the current price level.

There has been a slight improvement in combed peeler but not large enough to make any difference with spinners. Mercerizers are not taking much combed peeler from the market at present because they are unable to obtain specifications from hosiery and other trades.

Mercerizers are running at rates no more active than last month in many instances and are unable to take combed yarns on old contracts or to place new business. Prices have been unchanged and fairly steady this week.

Weaving counts displayed increased activity during the week, in southern markets, but knitters continued to pursue a policy of watchful waiting as far as yarns were concerned. Spinners feel that nearly all gray yarn stocks purchaseable at sacrifice prices have been moved and that many weavers and knitters will soon be obliged to contract for their yarn requirements at price levels based on sound cost figures.

The majority of orders placed this week in the South were for January and February deliveries. One fair size contract was placed for high grade 14s-2 carded warps for weaving, which were sold at 21c., while the combed yarn spinners of Gaston County also reported an increased demand for weaving counts.

◆Cotton Wastes Quiet and Steady

THERE is no change in the cotton waste situation. The amount of actual business transacted is still small in the aggregate, although inquiries appear to be more numerous and cover

a wider range of wastes. There was some call for choice upland strips from spinners of coarse yarns and a few inquiries for oily cards from blanket manufacturers.

Dealers regard the situation in the market as fundamentally sound. They point out that waste prices are not out of line with raw cotton prices, and that current stocks of wastes are not excessive. The bulk of their contracts for waste supplies have been placed on a basis which should enable them to realize a fair profit on their commitments. Any pronounced change for the better in the raw cotton and cotton goods markets might logically be expected to have an immediate and sympathetic effect upon the cotton waste business.

Set-Back In Cotton Goods

Nervous Sellers of Print Cloth Injure Tone of Market

STATISTICS seem to mean little to cotton goods sellers. Much has been made of the improved position of this market and yet there has been another unlooked for reduction in prices of print cloths with raw cotton and yarns showing a fairly stable appearance. Prices have been reduced from $\frac{1}{8}$ to $\frac{1}{4}$c. and sellers are finding orders more difficult to book than before.

Although trading has shown a tendency to expand since the first of the year it has not come along as rapidly as some believed it should. Taking things into their own hands one or two late last week cut and others have followed so that the lower range is general. Manufacturers receiving less for their goods, already down to cost, and sellers doing less, are the results to date.

Lower Blanket Prices

Opening of part-wool blankets was one of the features of the market. Leading manufacturers have lowered their prices on the new goods by a substantial amount. Reductions average 15 to 20 per cent, several going to 25 per cent on certain numbers. It means that on a blanket retailing for $5 the consumer should save a dollar. Sales manager of Pepperell Mfg. Co., said that the 1931 prices were the lowest in that company's history.

While competition is becoming keener in the more standard cotton cloths, progress continues in the fine dress goods fabrics. Favorable comment is being received from retailers and from buyers of the new and attractive cotton meshes and spongy fabrics that are being worn for afternoon and evening wear at southern resorts and later will be seen elsewhere. Nothing like them has been seen previously except in higher priced fine worsteds.

Print Cloths Dip Again

Despite the uncalled for reduction in print cloths the entire market is headed for greater activity. Spring call for goods is expected to broaden now and continue to expand into next month. It is unfortunate that buyers' confidence should be destroyed by this latest move on the part of print cloth houses. Sales have been reported of spot 80-squares at 7¾c. as compared with 8c. last week, and of spot 38½ in., 64x60, 5.35, at 5 to 5⅛c. as compared with 5¼c.

Wool Trend Toward Betterment

But Few Definite Constructive Factors Operative

WOOL showed limited improvement this week, with woolen wools bought more freely. In general the increased volume was slightly at the expense of prices. The trade is waiting a more extensive buying movement, and the longer this is delayed the larger will be the volume. The belief that mills are relatively short of wool is persistently held on Summer Street, and yet is lacking any known statistical basis.

There is no outstanding weakness in any particular grade or in any section of the market and yet a gradual softening in values is noticeable, so that although quotations would show little appreciable change the market is easier than it was at the beginning of the year. A survey of the general situation fails to bring to light any particularly constructive factor, although it may prove that the goods opening next month may furnish the needed stimulus and assistance. The main factors operative in robbing the market of any natural resiliency are (1) large wool stocks, (2) limited manufacturing demand, (3) new clip prospects and (4) low priced foreign wool markets.

Wool dealers are carrying a larger burden than in others years (chiefly by the cooperatives, however), and, by the same sign, manufacturers are holding smaller amounts of material. Independent dealers have done just as well and probably a little better than the big marketing organization, getting rid of a good percentage of their holdings in a higher market and are in this respect ahead of the cooperatives. Both cooperatives and independents are moving into a position for sharp competition for the 1931 wool clip. The growers are in for further disappointment, not owing to any lack of efficiency in the big marketing corporation but because of the decline in values. A return to normalcy in distribution and consumption of manufactured products seems to be the prospective basis for improvement in demand and price of domestic wool.

Foreign Wool Situation

Arrivals of wool from South America continue small and although imports of merinos have been a little larger of late, the very cautious purchasing for American account at a time when prices are decidedly low on American style wools, while playing into the hands of the National Wool Marketing Corp. with its large unsold stocks of domestic wool, can hardly be construed otherwise than unmistakeable evidence of grave uncertainty in the wool manufacturing situation. Australian merinos continue to be offered in this market at very low prices, so much lower than quotations on similar wools in bond as to raise question as to the reason for this divergence in values.

Bargains in Good Rags

Woolen rags continue to be sold at uneconomic prices and yet little improvement can be anticipated until the woolen industry is in receipt of larger business from the New York goods market. Under prevailing conditions merchants can buy some types of graded rags cheaper than they themselves can produce them with the further advantage of not having to put any unsaleable rags into stocks. Rags and reworks are in a thoroughly liquidated position. While the necessity in some cases to do business may prevent the market from making recovery, any substantial decline from current levels hardly seems possible.

There is still a belief that a renaissance in woolen manufacture is close at hand, and that if and when this occurs there will be good business for reworked wool manufacturers as well as for the multitude of graders. Some mills are showing more interest in offerings of clips. One of the highest priced clips at this time is tan camelhair and quoted 33 to 35c. Anything of a camelhair character seems to be in the lime-light, imports of camelhair noils occuring frequently. In old rags light hoods are in a depressed condition, a regular bargain at current price for the speculator.

Is Wool Supplanting Wastes?

Wool waste traders are expecting an early improvement in mill demand anti-

cipating that abnormally low prices now prevailing will shortly prove attractive to mill interests particularly those engaged in the manufacture of fabrics for women's wear. Prices are still rather irregular but the situation is crystalizing on a firmer basis. It looks as though there would be better business in cheap white wastes of all descriptions in the weeks ahead.

Although current prices are attractive the unhealthy situation among the mills is preventing anything more than a few sample orders. It is possible that some mills which a year ago were using wastes in preference to wool have reversed their position and are now using wool instead of waste. When new wool is obtainable at such low prices, wastes become wastes in fact and have to sell at "waste" prices to command attention.

Buyer's Market in Noils

It is a buyer's market in noils, but sentiment shows more confidence and very cheap lots are becoming scarcer. Prices are now quite on the usual line of parity with scoured and carbonized wools and are also on an attractive basis as related to mill wastes and recovered materials. Some members of the noil trade are considering contracts for future output of certain mills. Contractors in the Bradford market suffered severely last year owing to the drastic decline in prices and in recent months have been unable to find any safe basis for values. Not a few of them have fairly substantial stocks of relatively high priced noils in their possession with no immediate prospect of moving them except at a heavy loss.

◆ Wool Fabrics Seasonally Active

WOOL fabric markets are more active than for three months. Men's wear lines are more so than dress goods but both show a marked increase in sales as compared with last month. Active trading will probably be seen for the balance of January and through March. Buying is conservative so far as size of individual orders is concerned but the movement is much broader than noted previously.

Fancies are not selling so well in dress goods as sampling indicated. Goods of the chonga and crepe type are the leaders and these, particularly the chonga, have made this situation. Chonga is a "between" fabric and may be used either for sport or every day wear. Many buyers are going to take garments made of it for both purposes rather than buy two coats.

Dollar Dress Goods

These fabrics will also be used in spring dresses, manufacturers making goods of this type in lighter weights. Dress goods for the first time in several years have been moving at less than a dollar, majority being goods made to sell at this low figure but many spot lots are being sold at prices representing about half their original cost of manufacture earlier in the present season.

Buyers are surprised to find most sellers of men's wear holding firm on duplicates. They expected that manufacturers would be willing to sell on a price basis that is expected on next season's goods, but find them holding generally for prices that were named at the beginning of the season.

Most buyers want quick delivery and in frequent cases they find manufacturers and their agents unable to ship for several weeks. As usual, business in fancies is being lost by the immediate shipment specification. Small stocks are the most important item now in enabling sellers to hold prices.

Worsted Yarn Prices Unsteady

More Spring Business from the Knitting Trades Is Due

SALES worsted yarns have been slow to improve since the beginning of the year. Immediately after the first of the year there were signs of betterment but these have faded this week. Specifications on weaving yarn contracts have improved materially, but knitting spinners have been forced to reduce their operating schedules and many are running no more actively than in December.

Although there has been no general reduction in prices this week there is an absence of firmness and spinners here and there in both French and English sections are taking slightly less. Enough of this is being done to make it difficult to stimulate confidence in manufacturers to cover ahead on yarns to be used in their spring merchandise.

Usually there is a good volume of business passing to knitting yarn spinners at this time of the year from bathing-suit manufacturers. While this is true to a certain degree, expansion in yarn takings by these mills has been sub-normal this season. In one class, that of lower-price bathing suits, there is a good reason. Several manufacturers have quoted the trade $10.50 on these suits. To date they have been unable to buy yarns that will permit them to break even at such a figure. These mills as a result have not placed orders with spinners, majority waiting to see if additional reductions are made.

It is not likely that they will be favored in this respect for the time being anyway, spinners pointing out that keen competition among themselves rather than additional wool declines, has made the present price level.

In the higher-price fields, bathing suit manufacturers are taking larger deliveries on single 64s grades and indications are that a good volume will soon come into the market. There has been a good call for yarns going into knitted dress fabrics, but this has recently diminished. Infant's wear and sweater trades are taking little yarn at present.

Small orders from men's wear manufacturers are coming through, raising the total volume but failing to please mixture spinners who say that such business is not profitable at present price levels. Several French system spinners have quoted $1.60 for 2-30s, 64s, mixes, comparing with $1.65 formerly named. Specialty yarns for dress goods have been more active.

Raw Silk Advance Continues

Several Days Lull Follows Heavy Buying By Weavers

RAW silk continues its march upward. Prices have advanced 14 to 18c. and despite this, the week's business totals 9270 bales against 7,580 last week. The gain was a bit too rapid, however, and Wednesday brought a slight let-up in buying; coverage probably will become spirited again in a few days. Broadsilk mills buy freely for spot needs, and they have considerable difficulty in getting certain of the 20/22s; stocks are scarce both in New York and Yokohama—which is one of the reasons for the advance. Market tone is encouraging, so far as the next few weeks are concerned. Importers look for good business during the first half of February, but prospects beyond that are uncertain. There are conflicting reports regarding the situation of the broadsilk mills; some importers insist that fabric stocks are accumulating, especially in finished goods, while others report their customers to be moving their lines at a good rate.

See Active February

As February is normally a big month for broadgoods movement, that month should bring a steady call for raw material. The continued rise in prices brings Japan closer to the point of drawing upon her warehoused stocks, however, and Japan's policy on this

score may change the picture. Each rise reduces the loss to be suffered by the Japanese industry in selling the surplus, and importers believe that a few more weeks of advancing prices may decide Yokohama to start moving this silk; such a development would tend to slacken the upward trend.

Hosiery mills, which have been out of the raw silk market for nearly two months, begain to show preliminary interest this week; a few important firms placed small orders.

The vogue for abnormally low year-end inventories pushed much of December's business into January, and raw silk deliveries this month promise to reach surprising figures. One importer suggested that the total would be so high that it would serve further to inflate prices; decreasing stocks of available raw silk also may bring an advance. Japan's production now is at a low ebb, due to closing of filatures.

◆Thrown Yarn Outlook Better

BROADSILK weavers are gradually showing more interest in thrown silk yarns; throwsters were receiving plenty of inquiries this week, and orders picked up somewhat. Business is still far from normal, but the trade is confident and February prospects are viewed as encouraging. Hosiery mills also have begun to cover on yarn needs; these knitters are still cautious and are only feeling their way, but some increase in demand from this market is expected soon. Raw silk advances tend to help thrown yarn, except when the rises are so drastic as to scare away buying. Throwsters this week said they thought the market was gradually getting into satisfactory shape.

Spinners report a drop in future buying, due to the approach of spring. There is plenty of spot business available—at least for the large houses, and prices are very firm. Yarn mills are in a good postion, as they are still delivering on orders placed last fall; spinners are satisfied with the outlook, barring the prices, which allow of too meager a profit margin, it is complained. There is still talk of an end-February advance in spun yarn prices, but this is more hope than substance; to date, orders while good, are far from substantial enough to justify any rise.

◆Broadsilk Firming Trend Continues

THE firming up tendency in broadsilk prices noted last week has continued, though at a less pronounced rate. This week brought no price increases, but mills are holding to quotations, and the few cutters or retailers who are disposed to bargain get little encouragement. This applies chiefly to the larger producers; the small broadsilk houses are still afraid to pass up business, and will make concessions. The attitude of the seller is gradually getting firmer, however, and a continuance of this trend for several weeks would find the market reasonably stable. Consuming industries are more confident regarding spring prospects for their lines, and are buying steadily. Weavers enjoy a good call for the popular winter dark-ground prints and have no difficulty in getting list prices. All orders are spot and small; the broadsilk market does not look for much advance buying; so far as stocks are concerned, there is no need for it, as mills are cautious on output. Large producers insist that they are holding down output to actual business.

The insistence of cutters and retailers to buy as they go has deferred the movement of late spring prints, but mills are hopeful that these lines will begin to sell about the middle of next month. Shantung demand is picking up slowly; chiffons are still quiet and here too the season probably will be late.

Broadsilk mill men regard the current outlook as very encouraging; they see spring business as developing along sound lines, and they point out that a gradual firming is a better proposition than any artificial "jacking-up."

Better Call for Rayon

Some Firms Sold Ahead, Others Quiet, in Uneven Market

RAYON producers report varied sales reactions to the recent price cut; demand from weavers has increased sharply, but this business is unevenly distributed. Several firms, including one foremost producer, are sold ahead on certain popular deniers, especially the 150s, and are asking two to three weeks for deliveries; the pressure of demand has been so pronounced that one company has made changes in its production schedules to fill orders. Other firms, however, note only a mild increase in orders since the revision. Weavers of cotton-and-rayon fabrics are among the chief customers, at present; underwear knitters have placed fair business, mostly small and spot, but there is no real confidence at that end. Active coverage on rayon requirements is expected through February; the price cut seems to have cleared the air. Uncertainty has been eliminated and both yarn producers and yarn buyers are concentrating on merchandising.

Yarn producers are cautious regarding the broader prospects for spring consumption. The wild talk of a big demand following the cut, which was heard ten days ago is not taken very seriously; it has given way to a feeling of conservatism. The trade looks for a sales increase due both to the cut and to business improvement, but nobody expects enthusiastic buying. The larger firms are holding down their output schedules, pending more definite signs of spring increase. It is considered possible that the current rush reported by some firms is merely a reaction to the deadlock which preceded the price cut. For some weeks prior to the cut buying had virtually ceased and it was natural that a sharp spurt should follow the revision. It remains to be seen whether this increase is an overnight proposition or whether it is a definite sign of increased activity of mills.

Rayon waste is quiet, and prices are softer. Manufacturers enlivened a dull week by making some inquiries and dealers are hopeful that this will mean a better demand in February. Current turnover is practically negligible, and some dealers are selling below list to get cash. Stocks are light and any pick-up in demand would quickly firm prices, it is believed.

Hosiery Men Watching Silk

Gain in Primary Market May Help Full-Fashioned

OPENING of the fall sweater lines proved to be the chief event of an otherwise colorless week in the knit goods market. At moment of going to press the majority of the mills had shown their heavyweight sweaters, and prices were 10 to 12½% below last year's levels. Jobbers and retailers have manifested little interest so far; indeed, they are only beginning to cover actively on their spring sweater requirements, and coverage for fall probably will not develop for several weeks. Spring sweaters are selling steadily, especially pullovers in heavier mixtures, and a few substantial orders have been placed; buying is backward, however, and it will take some exceptionally good business to make up for the delay.

Bathing-suit movement continues good, with prices firm and distributors talking confidently of a profitable bathing-suit season. The call is chiefly for pastels and two-piece novelties in women's goods, and one-piece navies in

men's. Bathing-suit production is gradually getting under way on a big scale, but volume deliveries are not expected to start before the middle of March.

Full-Fashioned Weak

Women's full-fashioned hosiery prices are weak, and buying interest has fallen off; there is considerable distress merchandise available at bargain levels, and Worth Street factors are not optimistic about the prospects. The one bright spot on the horizon is that distributor stocks are low. Buyers are putting off their trips to New York, which suggests the possibility of a lot of business concentrated in a few weeks in February. Some full-fashioned mills report January sales to be ahead of the same month last year, and they are hopeful that this gain will be held. However, these firms are the exception rather than the rule. Producers of women's full-fashioned are watching raw silk quotations with especial interest, as it is agreed that any substantial rise in the price of raw material would compel a rise in full-fashioned prices eventually.

Men's half-hose is in a better position. Prices there also are weak, but there is more demand, and the three lines retailing respectively at 25c., 35c. and 50c. are in good call. Stocks of half-hose in mills are substantial, but knitters are making an effort to hold to list quotations.

Winter Underwear Active

Heavyweight underwear continues active as regards spot shipment; the announcement of fall lines seems to be still far away. Retailers placed a fair quantity of small orders this week; jobber demand is negligible. Lightweights for spring are in good call, especially cotton running-pants. Rayon underwear producers cut prices following yarn reduction, but this has not affected the market perceptibly, as the cut is small when it gets down to the distributor; rayon underwear movement is uneven, but mill men are confident of February improvement.

Inventory Shrinkage Brings Loss

Pequot's Operating Profit Swamped By Loss on Raw Material

A MANUFACTURING profit of $734,755 or more than $12 a share, made by Pequot Mills, Salem, Mass., last year was turned into a net loss of $545,097 because of shrinkage in raw material values, according to the annual report made at the stockholders meeting on Jan. 21. This report is typical of what may be experienced through inventary losses.

The surplus of the corporation is now $3,613,189 although dividends at the rate of $2 per quarter were maintained, and these payments, aggregating $449,364 plus the net loss, reduced the account by $981,549.

"Our sales in this year of depression dropped only 3½% below the sales in yardage in 1929 and in spite of two price reductions, only 9% in dollar volume," declared Treasurer Ernest N. Hood in his report.

"The continual drop in the price of raw cotton during the mill's fiscal year," he continued, "totaled 8c. per pound and prohibited all possibility of profitable operations. Our auditors estimate this shrinkage in cotton values represented a loss to the corporation, absorbed through the year in operations and taken at the end of the year in direct inventory markdowns, of about $1,269,852. Without this shrinkage in raw material values it is estimated we would have shown a profit of $734,755.70 or more than $12 per share."

Commenting on loss sustained and prospects for the future he said: "The above has to do with water that has gone over the dam. Now with inventories down to cotton's present subnormal level, from which no further substantial recession is probable, it is only necessary for the general business situation to mend to place the company again on a profitable basis.

"Wages have been maintained and are probably higher than in any other similar mill in the country. Manufacturing methods have been improved by the adoption of a machine extension plan through which a saving in operating costs is effected. These changes have been made with the complete cooperation of our employees with whom the management enjoys the most cordial relations.

"More money has been spent in advertising. Realizing at the beginning of the year the seriousness of the business situation more effort than ever before has been made to merchandise our product. Our selling agents, Parker, Wilder & Co., have worked hard and the newly formed sales promotion department has functioned effectively."

Lawton Mills' Poor Year

Surplus account of Lawton Mills Corp., Plainfield, Conn., for the year ended Nov. 29, 1930, shows a decrease from the previous year of $431,856 as compared with a reduction in surplus a year ago of $363,472.

During the past fiscal year, the company experienced an operating loss of $26,903, the first such loss in the history of the company which dates from 1906.

Factors contributing to the falling off in surplus included an inventory write-off of $210,812 and reasonably heavy charges for depreciation, interest and taxes. In the 1929 year, the surplus decrease of $363,472 included $30,000 unearned dividends. In 1928 a comparison of the balance sheets indicated a profit for the period of $140,144.

Volume of business booked during the last fiscal year was about half that of the previous year, plant operations averaging little more than 50% of capacity. At present, however, business has shown some improvement and the plant is now running at about 60% capacity.

Collins & Aikman

Collins & Aikman Corp., New York City, N. Y., reports for the nine months ended Nov. 30, 1930, net profit of $217,245 after depreciation, taxes and reserves for adjustment of inventories amounting to $592,748, equivalent to $2.46 a share on 88,300 shares of 7% preferred stock outstanding Nov. 30. This compares with net profit of $1,686,984, or $1.94 a share on 591,833 no-par common shares after dividend requirements on 7% preferred a year before. The 1930 net includes $137,509 excess of par value over cost of preferred purchased and held in the treasury.

For the year ended Dec. 31, 1930, Powdrell & Alexander, Inc., earned, according to preliminary estimates, $124,360 after depreciation and other charges of $97,000. After payment of preferred dividends totaling $35,314, the balance of $89,045 was equal to $1.59 per share on the common as compared with $7.56 in the previous year.

Ask Tucapau and Pelzer Receiver

A protective committee appointed by holders of New England Southern Corp. 7% notes, due in 1933, has petitioned the Spartanburg (S. C.) Court of Common Pleas to appoint a receiver for the Tucapau (S. C.) and the Pelzer (S. C.) mills, both of which are owned by New England Southern and whose stock was pledged by the latter as security for the notes. The committee was formed following default of interest on the notes.

Holmes Committee Reports

The special committee of directors and stockholders of Holmes Mfg. Co., New Bedford, Mass., appointed to consider the future status of the corporation, have presented three plans, and have asked stockholders to be present at the adjourned meeting January 27 to act on their suggestions. The plans involve reorganization, partial liquidation and complete liquidation.

Boston Stock Auctions

The following sales of textile shares were made at Wednesday's auctions:

Shrs.	Mill	Par	Price	Change
78	Associated Textile	...	35–36½	.....
62	Farr Alpaca	100	50½	—19½
80	Sanford, com	100	33½–½	— 1½
100	Berkshire, com	...	7½	+ 3½
60	Naumkeag	100	80–84	.....
1	Brookside	100	184	— 2
30	U. S. Finishing, pfd	100	42	.....
50	Queen City	100	5½	— 7
461	Total			

QUOTATIONS

at close of business, Jan. 21, 1930
Prices cover average qualities unless otherwise stated

Cotton Goods

	Jan. 21	Jan. 14	Jan. 22 1930
PRINT CLOTHS			
27-in., 64x60, 7.60	3¾c.	3¾–3⅞c.	4⅛–4¼c.
38½-in., 64x60, 5.35	5c.	5¼c.	6¼c.
39 -in., 68x72, 4.75	5¼c.	6c.	7¼c.
39 -in., 72x76, 4.25	6⅛–6¼c.	6¾c.	8¼c.
39 -in., 80x80, 4.00	7¼–7¾c.	7⅞– 8c.	9⅛c.
BROWN SHEETINGS			
36-in., 56x60, 4.00	6c.	6c.	8c.
36-in., 48x48, 3.00	6½c.	6½c.	9⅛c.
37-in., 48x48, 4.00	5¾c.	5¾–5⅞c.	7¼c.
PAJAMA CHECKS			
36½-in., 72x80, 4.70	6c.	6c.	8⅛–8½c.
36½-in., 64x60, 5.75	5c.	5c.	7 c.
MISCELLANEOUS			
Drills, 37-in., 3 yd.	7½c.	7½c.	10½c.
Denims, 2.20	11½c.	11½c.	15c.
Tickings, 8 oz	15 c.	16 c.	19½c.
Standard prints	7½c.	7½c.	9½c.
Eastern staple ginghams, 27-in.	8 c.	8 c.	10 c.

Cotton Waste

Peeler comber	8½— 8¾
Peeler strips	7½— 8
Sak. comber	7½— 8
Choice willowed fly	3¾— 4¼
Choice willowed picker	3 — 4
Sak. strips	10½—11
Linters (mill run)	2½— 3½
White spooler (single)	7 — 7½

Cotton Yarn

CARDED (Average Quality)

Double Carded 2c.—4c. higher according to quality

SINGLE SKEINS OR TUBES (Warp Twist)

4s to 8s	– .18	22s	$0.22
10s	.18 – .18½	24s	.22½– .23
12s	.18½– .19	26s	.23½– .24
16s	.19½– .20	30s	.25 – .25½
20s	.20 – .20¼	40s ex. qual.	– .36

TWO-PLY SKEINS AND TUBES

8s-2	$0.18½	26s-2	$0.24
10s-2	.18½– .19	30s-2	– .25½
12s-2	– .19	36s-2	– .31½
14s-2	– .19½	40s-2	.32½– .33
16 2-s	19½– .20	40s-hi.brk.	– .37
20s-2	.20 – .20½	50s-2	– .41
24s-2	.23 – .23½	60s-2	– .51

SINGLE WARPS

10s	$0.18½	24s	$0.23
12s	– .19	26s	– .24
14s	.19 – .19½	30s	– .26
16s	.19½– .20	40s ex.qual	– .37
20s	– .20½		

TWO-PLY WARPS

8s-2	$0.18½	24s-2	$0.23½
10s-2	– .19	26s-2	– .24½
12s-2	– .19½	30s-2	.25½– .26
14s-2	– .20	40s-2 ordin.	– .34
16s-2	– .20	50s-2	– .42
20s-2	– .20½	60s-2	– .52

8s-3 and 4-ply skeins and tubes; tinged, 17; white, 18; waste, 16

HOSIERY CONES (Frame Spun)

8s	$0.18½	22s	$0.22
10s	.18½– .19	24s	– .22½
12s	– .19	26s	– .23
14s	– .19½	30s tying	– .25
16s	– .20	30s reg	– .26
18s	– .20½	30s ex.qual.	.28 – .28½
20s	– .21	40s	– .34

COMBED PEELER (Average Quality)

TWO-PLY—(Knitting Twist) Cones

20s-2	$0.34 – .35	60s-2	$0.54 – .55
30s-2	.38 – .39	70s-2	.64 – .65
36s-2	.40 – .41	80s-2	.74 – .76
40s-2	.42 – .43	90s-2	.90 – .93
50s-2	.47 – .48	100s-2	1.10 –1.15

WARPS, SKEINS AND CONES

TWO-PLY—(Warp Twist)

20s-2	$0.35	60s-2	$0.55
30s-2	– .40	70s-2	– .65
36s-2	– .41	80s-2	.75 – .77
40s-2	– .43	90s-2	.92 – .95
50s-2	– .48	100s-2	1.12 –1.17

SINGLES

12s	$0.27 – .27½	30s	$0.37 – .37½
14s	.27½– .28	38s	.39½– .40
16s	.28 – .28½	40s	.40½– .41
18s	.28½– .29	50s	.46 – .47
20s	.29½– .30	60s	.53 – .54
24s	.32 – .32½	70s	– .63
28s	.35½– .36	80s	– .73

MERCERIZED CONES—(Combed, Ungassed)

26s-2	$0.50 – .51	90s-2	$1.29 –1.32
30s-2	.52 – .53	100s-2	1.59 –1.61
36s-2	.55 – .56	120s-2	1.98 –2.05
40s-2	.58 – .59	30s	.63 – .65
45s-2	.60 – .61	40s	.68 – .70
50s-2	.62 – .64	50s	.75 – .77
60s-2	.70 – .72	60s	.83 – .85
70s-2	.82 – .84	70s	.95 – .97
80s-2	.94 – .98	80s	1.17 –1.19

Cotton Prices and Statistics

FLUCTUATIONS OF FUTURES

	Closed Jan. 15	For Week High	For Week Low	Closed Jan. 21	Net Chge.
January	10.07	10.47	10.04	10.46	+ .39
February	10.08	10.25	10.08	10.25	+ .17
March	10.17	10.37	10.10	10.31	+ .14
April	10.29	10.44	10.29	10.44	+ .15
May	10.41	10.61	10.35	10.57	+ .16
June	10.51	10.68	10.51	10.68	+ .17
July	10.62	10.84	10.55	10.79	+ .17
August	10.70	10.90	10.70	10.90	+ .20
September	10.70	10.90	10.70	10.90	+ .20
October	10.78	11.04	10.73	11.01	+ .23
November	10.85	11.10	10.85	11.10	+ .25
December	10.93	11.20	10.89	11.20	+ .27

SPOT FLUCTUATIONS FOR WEEK

(Middling)

	New York	New Orleans	Liverpool
Friday, Jan. 16	10.15	9.73	5.41
Saturday, Jan. 17	10.15	9.73	5.41
Monday, Jan. 19	10.15	9.73	5.40
Tuesday, Jan. 20	10.20	9.83	5.39
Wednesday, Jan. 21	10.45	9.93	5.51
Thursday, Jan. 22	10.55	10.03	5.60

FOREIGN COTTONS

Egyptian Cotton

Alexandria Exchange, Jan. 21		Change
March Sak	15 67	+1.20
February uppers	10.95	+0.31

Jan.-Feb. Shipment c. i. f. Boston.
(Tariff not included)

Fully good fair Sak	17.50
Fully good fair to good Uppers	13.50

(By Anderson, Clayton & Co.)

Foreign cottons	F. O. B. New York, Cents
Peruvian Tanguis Strict Middling	19½
Peruvian Pima No. 1	19
Peruvian Moderate Rough	16
Peruvian Full Rough	21
China Tientsin No. 1	9⅞
India Rough	7 to 10
India Smooth	7 to 10

(By Gerald G. Loeb, New York.)

BASIS MIDDLING

	Saturday, Jan. 17	Saturday, Jan. 10
10 markets average	9.42	9.44
Memphis	8.95	9.00

PREMIUM STAPLES

First Sales from Factors Tables at Memphis

Grade Strict Middling	Prices Nominal
1⅛-in	11.50@11.70c.
1 3/16-in	13.25@13.50c.
1¼-in	17.90@18.25c.

CURRENT SALES

	For Week	Prev. Week	Week Before
Memphis Total	12,282	14,460	7,962
F.o.b. included in total	11,575	12,117	6,718
10 markets	58,847	64,404	49,236

MEMPHIS RECEIPTS, SHIPMENTS, ETC.

	For Week	Last Year	Year Before
Net receipts	8,837	22,070	30,834
Gross receipts	24,495	46,406	58,694
Total since Aug. 1, net	546,825	768,046	634,489
Shipments	24,116	46,577	54,092
Total since Aug. 1	732,799	1,092,035	987,056
Total stock	390,401	434,967	293,814
Increase for week	379 *	171	4,602
Unsold stock in hands of Memphis factors	74,530	59,973	.....
Decrease for week	3,443	1,684	.....

*Decrease

AVERAGE PRICE JAN.-FEB. SHIPMENT HARD WESTERN COTTON

F. o. b. New England

	Middling	St. Middling
1 1/16 in	12½–12¾c.	12½–12¾c.
1⅛ in	12⅝–13 c.	13½–13⅝c.
1 3/16 in	14½–15 c.	15½–16 c.
1¼ in	19 –21c.	20 –22c.

Basis on New York, March 10.31c.

SPOT FLUCTUATIONS AND STOCKS

Markets	Middling Jan. 14	Middling Jan. 21	Sales	Stocks This Week	Stocks Last Year
Galveston	9.90	10.05	3,496	653,017	449,317
New Orleans	9.73	9.93	13,195	764,017	514,829
Mobile	9.10	9.30	590	188,607	43,247
Savannah	9.46	9.61	1,345	325,831	77,475
Norfolk	9.69	9.81	288	95,497	76,581
New York	10.05	10.45	2,900	228,883	97,233
Augusta	9.31	9.56	1,176	118,470	104,418
Memphis	8.90	9.05	11,444	387,041	437,694
St. Louis	8.75	9.00	.....	15,043	14,134
Houston	9.80	10.00	18,106	1,449,911	1,107,329
Dallas	9.35	9.55	12,179	23,950	14,017

DIFFERENCES ON AND OFF MIDDLING

WHITE GRADES

	Dallas	Memphis	Montgomery	Augusta	Average
M. F	.75†	1.00†	.85†	.75†	0.87†
S. G. M	.60†	.75†	.75†	.63†	.70†
G. M	.50†	.50†	.60†	.50†	.51†
S. M	.35†	.25†	.35†	.25†	.30†
S. L. M	.60*	.75*	.65*	.50*	.64*
L. M	1.35*	1.50*	1.50*	2.25*	1.43*
S. G. O.**	2.25*	1.75*	2.50*	3.50*	2.28*
G. O	3.25*	2.00*	3.50*	4.50*	3.06*

YELLOW TINGED

G. M	0.50*	0.75*	0.50*	0.50*	0.58*
S. M	1.00*	1.25*	1.00*	1.00*	1.03*
M.**	1.75*	1.50*	1.50*	1.50*	1.58*
S. L. M	2.50*	1.75*	2.25*	2.25*	2.20*
L M.**	3.50*	2.00*	3.00*	3.00*	2.97*

YELLOW STAINED

G. M	1.50*	1.75*	1.50*	1.50*	1.55*
S. M.**	2.25*	2.00*	2.50*	2.50*	2.30*
M.**	3.00*	2.50*	3.50*	3.50*	3.10*

BLUE STAINED

G M.**	1.75*	1.50*	1.75*	1.75*	1.67*
S. M.**	2.25*	1.75*	2.75*	2.75*	2.3 *
M.**	3.00*	2.25*	3.75*	3.75*	3.1 *

**Grades not deliverable on contract. †On Middling
*Off Middling.

Wool

OHIO, PENNSYLVANIA AND WEST VIRGINIA (IN GREASE)

Fine delne.	$0.29 –$0.30	¾ blood	$0.27 –$0.28
Fine clthg	.25 – .26	¼ blood	.26 – .27
¼ blood	.28 – .29		

TEXAS AND CALIFORNIA (CLEAN BASIS)

Texas, 12 months	$0.65 –$0.68		
California, Northern	.58 – .60		

PULLED—EASTERN (CLEAN BASIS)

A.A.	$0.68 –$0.70	B-Super	$0.43 –$0.48
A-Super	.55 – .58	C-Super	.41 – .43

MONTANA, IDAHO AND WYOMING (CLEAN BASIS)

Staple fine	$0.68 –$0.72
Staple ½ bld.	.62 – .65
Fine and fine medium	.63 – .65
¾ blood	.55 – .58
½ blood	.51 – .53

MOHAIR—DOMESTIC

Best Carding	$0.30 –$0.33
Best combing	.45 – .48

MOHAIR FOREIGN (IN BOND)

Turkey fair, average	$0.18 –$0.20
Cape firsts	.20 – .22

FOREIGN CLOTHING AND COMBING (CLEAN BASIS IN BOND)

Australia:	
70s	$0.58 –$0.60
64s	.42 – .45
58s-60s	.38 – .40
(IN GREASE)	
Montevideo:	
58s-60s	$0.18 –$0.19
56s	.17 – .18
50s	.16 – .17
Buenos Aires:	
4s, 40-44s	$0.12 –$0.13
5s, 36-40s	.10 – .11

FOREIGN CARPET (GREASE BASIS IN BOND)

Aleppo	$0.20 –$0.22
China: Combing No. 1	.11 – .12
China Filling Fleece	.10 – .11
Szechuen ass't	.11 – .12
Cordova	.11 – .12
Scotch black face	.13 – .14
East India: Kandahar	.18 – .19
Vican'r	.22 – .24
Joria	.21 – .22

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s 36s	$0.89 –0.85
2-24s 40s	.99 – .92½
2-26s 44s	.92½– .95
2-28s 46s	1.05 –1.07½
2-30s 48s	1.07½–1.12½
2-32s 50s	1.10 –1.15

(Single yarns 5c. less than above)

2-36s, 58s	$1.30 –1.32½
2-40s, 60s	1.37½–1.42½
2-40s, 64s	1.42½–1.45
2-50s, 66s	1.62½–1.65
2-60s, 70s	1.95 –1.97½

ENGLISH SYSTEM KNITTING

2-20s, 44s in oil	$0.80 –0.82½
2-20s, 48s in oil	.87½– .90
2-20s, 50s in oil	– .92½
2-20s, 56s in oil	1.02 –1.05
2-20s, 60s in oil	1.17½–1.20
2-20s, 6's in oil	–1.27½
1-15s, 46s dyed	1.00 –1.05
1-15s, 48s dyed	1.02½–1.07½
1-15s, 50s dyed	1.05 –1.10

(Oil yarns 17½c. less)

FRENCH SYSTEM

1-20s, 58s	$1.15 –1.17½
1-20s, 60s	1.20 –1.22½
1-18s, 64s, dyed	1.40 –1.42½
1-26s, 64s	1.22½–1.25
1-30s, 60s, Warp	1.30 –1.32½
1-30s, 64s, Warp	1.32½–1.35
2-30s, 64s, Fancy mixes	1.60 –1.65
2-40s, 64s, Zephyrs	1.45 –1.50
1-50s, 66s	1.60 –1.62½
2-50s, 66s	1.75 –1.77½
1-60s, 70s	1.95 –1.97½
2-60s, 70s	2.05 –2.10

FRENCH SPUN MERINO WHITE

1-30s, 50-50-58s on cops	$1.02½–1.05
1-40?, 50-50-60s on cops	1.15 –1.17½
1-40s, 50-50-64s on cops	1.17½–1.20
1-40s, 50-50-64s Australian cops	1.25 –1.30

Underwear mixes, 3c. additional.
Solid color, 35c. additional.

◆

Tops and Noils

TOPS—BOSTON

Fine (64-66s)	$0.93–$0.95
Half-blood (60-62s)	.85– .87
High ¾ blood (58s)	.80– .82
Aver. ¾ blood (56s)	.75– .78
Low ¾ blood	.70– .73
High ¼ blood (50s)	.65– .68
46s S. A. and N. Z.	.60– .63
44s S. A. and N. Z.	.58– .60
40s S. A. and N. Z.	.56– .58

TOPS—BRADFORD, ENG. (JAN. 16)

Fine (70s)	26 d	¾ bld. (56s)	15 d
Fine (64s)	22 d	¼ bld. (50s)	12½d
½ bld. (60s)	19½d	Cross-bred (46s)	10½d
¾ bld. low (58s)	17½d		

NOILS—BOSTON

Fine	$0.45–$0.48	High ¾ bld.	$0.33–$0.35
Half-bld.	.41– .43	Low noils	.28– .30
Aver. ¾ bld.	.35– .38	Medium colored	.28– .30
Fine colored	.35– .38		

Wool Substitutes

WOOL WASTE

Lap, fine white	$0.68 –$0.70
Lap, fine colored	.48 – .52
Hard ends, fine white	.50 – .53
Hard ends, ½ blood white	.33 – .35
Hard ends, fine colored	.23 – .25
Hard ends, medium colored	.18 – .20
Card, fine white	.25 – .28
Burr, fine Carbonizing	.30 – .33

OLD WOOLEN RAGS (GRADED FOR MFRS.)

Merinos, Coarse Light	$0.04½–$0.05½
Merinos, Fine Dark	.04 – .04½
Merinos, Fine Light	.11 – .12
Serges, Blue	.06 – .06½
Serges, Black	.06 – .06½
Serges, Red	.08 – .09
Knit, White	.21 – .22
Knit, red	.10½– .11½
Knit, Light Hoods	.11 – .12
Worsted, Light	.05½– .06
Worsted, Blue	.06½– .07
Worsted, Black	.06½– .07

Silk Yarns

THROWN SILK (60 day basis)

	Nominal
Japan organzine, 2 thd. spec. gd. XX. sk. 85%	$4.50
Japan organzine, 2 thd. sp. crack. sk. 81%	4.00
Japan crepe, 3 thd. gd. XX bob. 83%	4.20
Japan crepe, 3 thd. sp. crack. bob. 81%	4.10
Japan crepe, 4 thd. crack bobbins, 78%	3.80
Japan grenadine, 4 thd. sp. grand singles, 87%	6.20
Japan grenadine 4 thd. 85%	5.95
Japan grenadine 3 thd. 99%	7.20
Canton crepe, 3 and 4 thd. ns. 14/16 on bobbins	3.00
Hosiery tram, 3 thd. Japan 90%	5.30
Hosiery tram, 5 thd. Japan, 85%	4.35
Hosiery tram, crack XX 78%	3.50

SPUN SILK YARNS (Terms: net 30)

40/2	$3.15	60/2	$3.35
50/2	3.25	62/1	2.35

Raw Silk

(60 day basis)
Prices Nominal

	13/15 White	20/22 White	20/22 Yellow
Super Grand, 86/88%	$3.95	$3.35	$3.35
Special Grand, 85%	3.50	3.20	3.20
Grand XX, 83%	3.30	3.15	3.15
Special Crack, 81%	3.10	3.05	3.05
Crack XX, 78%	3.05	3.00	3.00
Extra Extra, 73%	2.90	....	....
Best Extra, 68%	2.85	....	....

Canton filature, new style, 14/16	$2.00
Canton filature, new style, 20/22	1.80
Tussah filature, 8 cocoon	1.15

NATIONAL RAW SILK EXCHANGE

	Close Jan. 14	For the Week High	For the Week Low	Close Jan. 20	Net Chge
January	2.64	2.82	2.60	2.82	+.18
February	2.64	2.80	2.60	2.80	+.16
March	2.64	2.80	2.61	2.80	+.16
April	2.63	2.77	2.60	2.77	+.14
May	2.60	2.77	2.59	2.76	+.16
June	2.57	2.76	2.57	2.75	+.18
July	2.60	2.77	2.59	2.75	+.15
August	2.59	2.76	2.59	2.75	+.16

Jan. 14 to Jan. 20—Total contracts, 927. Total number of bales, 9,270. Total approximate value $27,068.40
Trading unit crack xx, 78% 13/15 white.

Domestic Rayon

VISCOSE PROCESS

Denier	Filament	First Qual.	Second Qual.
50	14	$2.15	$1.95
75	18–30	1.35	1.25
100	18–40	1.10	1.00
125	36–50	1.00	.90
150	30	.70	.67
150	40	.75	.72
150	60	.85	.82
150	75–90	.85	.82
170	24–27	.75	.72
170	60	.85	.82
200	30	.75	.72
200	35–42	.75	.72
300	42–62	.63	.60
450	54–60	.63	.60
600	72–96	.63	.60
900	100–144	.63	.60

NITRO-CELLULOSE PROCESS

Denier	First Qual.	Second Qual.	Denier	First Qual.	Second Qual.
75	$1.35	$1.25	150	$0.75	$0.72
100	1.05	.95	175	.75	.72
125	.95	.85			

CUPRAMMONIUM PROCESS

Denier	Filament	Price	Denier	Filament	Price
15	24	$3.10	65	45	$2.00
25	24	2.85	80	60	1.70
30	24	2.60	100	75	1.35
40	30	2.40	120	90	1.22
52	30	2.20	150	112	1.10
			180	135	.97

ACETATE PROCESS

Denier	Price	Denier	Price
45	$2.25 2.75	120	$1.90
55	2.05–2.55	140	1.30
65	2.45	150	1.40–1.85
75	1.80–2.70	200	1.55
100	1.65–2.45	300	1.50

Rayon Waste

Prices Nominal

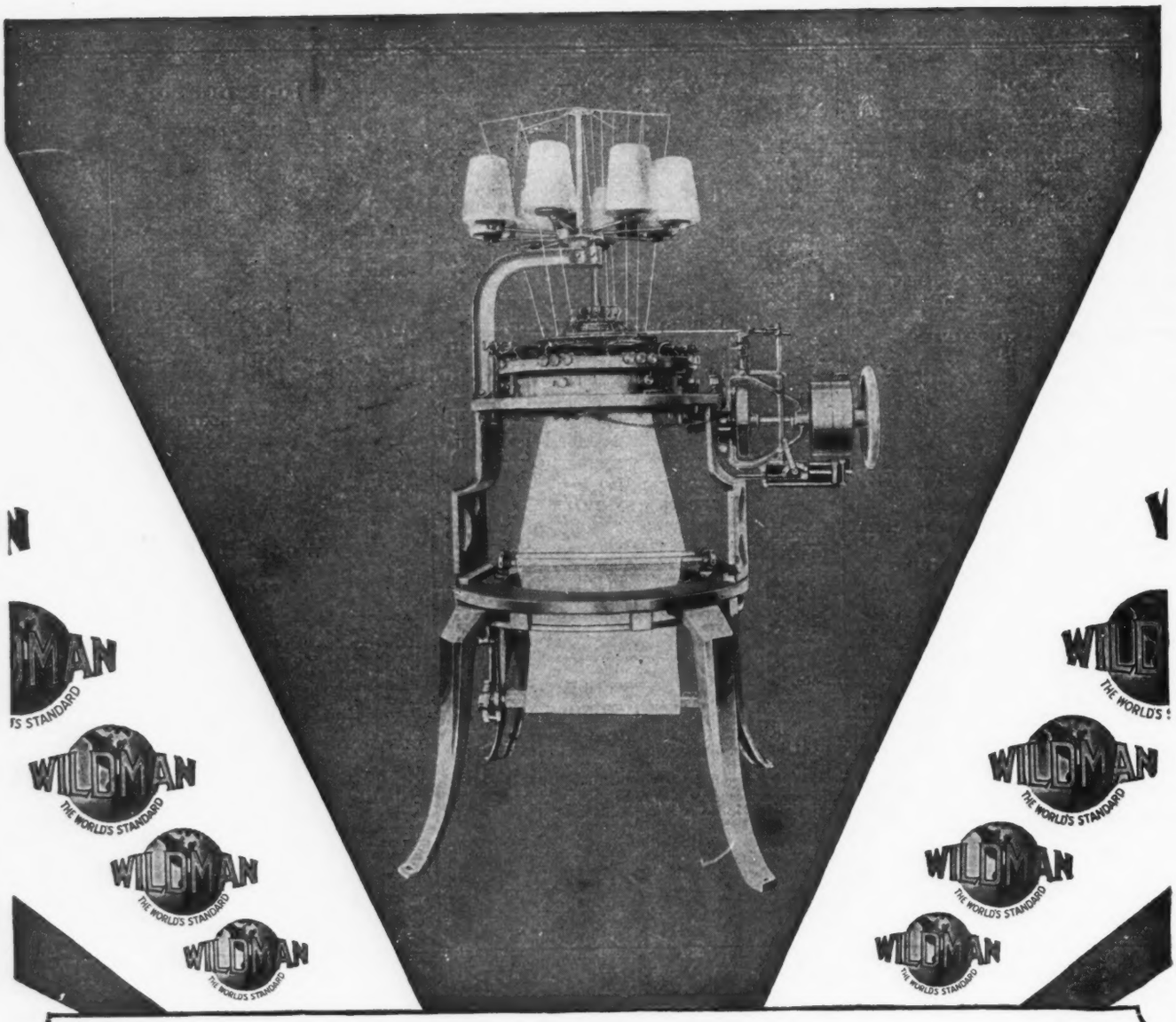
Open bleached waste	–$0.13
Open unbleached waste	.11– .13
Bleached thread waste (mfs.)	.11– .11½
Bleached thread waste (misc.)	.05– .07
Colored thread waste	...– .04
Colored clips	...– .04

CONVERTED RAYON WASTE

Bleached tops	$0.40
Unbleached tops	.36
Bleached noils	.10
Bleached garnetts	.15
Unbleached garnetts	.14
Colored garnetts	.12

Silk Waste

Kibizzo Kakai Grand XX	$0.54
Kibizzo Kakai Triple Extra	.48
Frison Grand Double	.52½
Pierced Cocoons	.53



Rayon Manufacturers! The Wildman Machine operates at lower cost—with less needle breakage—without traveling waste—with imperfections reduced to a minimum.

WILDMAN MANUFACTURING CO.
Norristown, Pa.

WILDMAN
SPRING NEEDLE BODY MACHINE

Southern Mill Securities

(A. M. Law & Co., Spartanburg)

	Bid	Asked
Abbeville Cotton Mills	..	40
Anderson Cotton Mills	55	65
Arcade Cotton Mills	..	50
Arcadia Mills	..	200
Arcadia Mills, pfd	80	90
Arkwright Mills	..	45
Augusta Factory, Ga	..	20
Avondale Mills, Ala	500	800
Beaumont Mfg. Co	200	250
Beaumont Mfg. Co. 7% pfd	93	100
Belton Mills	..	20
Belton Mills, pfd	55	63
Bibb Mfg. Co	95	100
Brandon Corp., A	..	40
Brandon Corp., B	..	6
Brandon Corp., pfd	..	70
Calhoun Mills	..	85
Chadwick-Hoskins Co. (par, $25)	6	9
Chesnee Mills	..	40
Chiquola Mfg. Co	..	200
Chiquola Mfg. Co., pfd	80	85
Clifton Mfg. Co	86	92
Clinton Cotton Mills	..	220
Columbus Mfg. Co., Ga	55	60
Cowpens Mills	..	20
D.E. Converse Co	..	80
Dallas Mfg. Co., Ala	35	40
Darlington Mfg. Co	..	45
Drayton Mills	65	..
Dunean Mills	98	110
Dunean Mills, pfd	92	97
Eagle & Phoenix Mills, Ga	..	55
Easley Cotton Mills, pfd	..	30
Enterprise Mfg. Co., Ga	..	75
Fairforest Finishing Co., serial notes	95	100
Florence Mills	40	50
Florence Mills, Pfd	93	97
Gaffney Mfg. Co	..	15
Gainesville Cotton Mills, Ga	..	110
Glenwood Mills	80	90
Gluck Mills	45	50
Gossett Mills	..	45
Graniteville Mfg. Co	..	85
Greenwood Cotton Mills	500	..
Grendel Mills, pfd. (par, $50)	40	45
Hamrick Mills	..	90
Hartsville Cotton Mills	..	120
Hunter Mfg. & Com. Co., pfd	62	66
Industrial Cotton Mills Co., pfd	..	25
Inman Mills	..	100
Inman Mills, pfd	90	100
Judson Mills, A, pfd	80	90
Judson Mills, B, pfd	80	85
King, John P. Mfg. Co., Ga	..	80
Lancaster Cotton Mills	225	..
Laurens Cotton Mills	..	95
Limestone Cotton Mills	..	90
Lydia Cotton Mills, serial notes	..	95
Marion Mfg. Co., N. C	..	90
Marlboro Mills	..	11
Mills Mill, pfd	80	90
Mollohon Mfg. Co., pfd	90	100
Monarch Mills	..	83
Musgrove Cotton Mills	..	20
Newberry Cotton Mills	90	100
Ninety-six Mills	400	..
Norris Cotton Mills	..	30
Orr Cotton Mills	..	50
Orr Cotton Mills, pfd	60	65
Pacolet Mfg. Co	..	80
Pacolet Mfg. Co., pfd	..	75
Panola Cotton Mills, Class A, pfd. (par, $60)	45	50
Pickens Cotton Mills	100	110
Piedmont Mfg. Co	85	90
Piedmont Print Works (no par)	..	5
Piedmont Print Works, pfd	..	50
Poe, F. W. Mfg. Co	18	22
Riverside & Dan River Mills	9	10
Riverside & Dan River Mills, 6% pfd	59	65
Saxon Mills	..	50
Sibley Mfg. Co., Ga	50	60
Southern Bleachery	..	15
Southern Bleachery, pfd	..	70
Southern Bleachery, serial notes	90	100
Southern Franklin Process	18	22
Southern Franklin Process, pfd	95	100
Southern Worsted Corp., pfd	70	80
Spartan Mills	95	110
Spencer Corp., serial notes	95	100
Union-Buffalo Mills	..	30
Union-Buffalo Mills, 1st pfd	63	68
Union Buffalo Mills, 2nd pfd	..	35
Victor-Monaghan Co	50	54
Victor-Monaghan Co., pfd	100	110
Wallace Mfg. Co	..	90
Ware Shoals Mfg. Co	110	120
Woodside Cotton Mills Co	..	20
Woodside Cotton Mills, pfd	12	15
Yarns Corp. of America, gold bonds	95	100

New England Textile Stocks

Quotations at "Public Sale" are based on last sales at Boston Public Auctions and Boston Stock Exchange. Bid and Asked prices are latest quotations of dealers.

	Sale	Bid	Asked
Am. Mfg. Co	52	50	55
Amoskeag	8½	...	...
Arlington	16½	15	17
Associated Textile	36½	34	37
Bates	64	59	64
Berkshire, Associates, com	7⅝	7	10
Berkshire Associates, pfd	25	25	30
Bigelow-Sanford, com	28½	...	...
Boott Mills	120½	...	108
Edwards	80⅝	59	63
Esmond, pfd	98	95	98
Farr Alpaca	50¼	51	54
Hamilton Woolen	40	33	36
Hill	9	9	12
Indian Orchard	20⅛	20	25
Ludlow	117½	112	118
Merrimack, com	35	24	28
Nashua, com	10½	6	8
Nashua, pfd	66	27	..
Naumkeag	84	80	83
Newmarket	16½	13	16
Otis	43	30	32
Pacific	17⅞	...	...
Pepperell	80½	75	78
Plymouth Cordage	66	65	...
York	8¼	6	8

◇

Textile Calendar

National Association of Cotton Manufacturers, Special Meeting, Chamber of Commerce Building, Boston, Jan. 30, 1931.

Southern Textile Association, Alabama-Mississippi-Louisiana Division, Regular Meeting, Chamber of Commerce, Montgomery, Ala., Jan. 30, 1931.

Piedmont Section, American Association of Textile Chemists and Colorists, Regular meeting, Greensboro, N. C., Jan. 31, 1931.

National Retail Dry Goods Association, 20th Annual Convention, Hotel Pennsylvania, New York, Feb. 2 to 6, 1931.

Boston Wool Trade Association, annual banquet, Copley-Plaza Hotel, Boston, Mass., Feb. 5, 1931.

The Textile Forum, N.A.C.M., warp preparation and weaving, Boston (Mass.) Chamber of Commerce, Feb. 10, 1931.

International Association of Garment Manufacturers, 24th Annual Convention and 18th Annual Textile and Machinery Exposition, Hotel Stevens, Chicago, March 3 to 5, 1931.

The Textile Forum, N.A.C.M., overseers of finishing, Boston (Mass.) Chamber of Commerce, March 10, 1931.

Wholesale Dry Goods Institute, Annual Meeting, Hotel Pennsylvania, New York, Jan. 20 and 21, 1931.

Wool Blanket Manufacturers Association, Quarterly Meeting, Hotel Pennsylvania, New York, Mar. 27, 1931.

Export Managers Club of New York, Annual Get-together Meeting, Hotel Pennsylvania, New York, Mar. 3, 1931.

Knitting Arts Exhibition, Commercial Museum, Philadelphia, April 13 to 17, 1931.

Exposition of Chemical Industries, Grand Central Palace, New York, May 4 to 9, 1931.

American Cotton Manufacturers Association, Thirty-fifth Annual Convention, Bon Air-Vanderbilt Hotel, Augusta, Ga., April 23 to 25, 1931.

Textiles on N. Y. Exchanges

The following shows the movements of the leading textile stocks listed on the New York Stock Exchange and Curb for the week ended Jan. 21:

	High	Low	Last Sale	Net Chge.
*American Thread, pfd	3½	3½	3½	— ⅜
American Woolen	10¼	9¼	9½	—1¼
American Woolen, pfd	32¼	29⅜	29½	—1⅜
*Assoc. Rayon, pfd	44½	39½	43¼	+1⅜
Belding-Heminway	2¼	2¼	2¼	— ⅜
Cannon Mills	19	18½	19	—1½
Century Ribbon	3	3	3	...
Collins & Aikman	13½	12	12¼	—1¼
Consolidated Textile	⅛	⅛	⅛	— ⅛
Duplan Silk	13¾	13⅜	13½	— ⅛
Durham Hosiery, pfd	22	21½	21½	— ½
*Fabrics Finishing	⅛	⅛	⅛	...
Gotham Hosiery	6	5⅛	5⅛	— ⅛
Industrial Rayon	48¼	45	45	—6
Kayser, Julius	17	17	17	— ½
Kendall, pfd	27	25½	25½	+1½
Mallinson	2½	2½	2½	— ½
Mohawk Carpet	16	15½	16	+ ½
Munsingwear	28¼	27½	27½	—1½
Pacific Mills	19	18¼	18¼	—1¼
*Powdrell & Alexander	25	25	25	...
*Propper-McCallum	3	3	3	—1
Real Silk Hosiery	27	25⅞	26	—1⅛
*Tubize Chat B	4	4	4	— ⅜
United Piece Dye Works	26	24¼	25	+ ⅝

*Listed on Curb.

Fall River Mill Stocks

(G. M. Haffards & Co., Fall River)

	Bid	Asked
Algonquin Printing Co	275	..
Barnard Mfg. Co	5	10
Berkshire (com.)	7	..
Berkshire (Pfd.)	28	..
Bourne Mills	11	13
Border City Mfg. Co	3	..
Charlton Mills	30	..
Cornell Mills	3	..
Davis Mills	..	4
Davol Mills	..	4
Flint Mills	..	..
King Philip Mills	..	..
Laurel Lake Mills (com.)	..	5
Luther Mfg. Co	..	80
Merchants Mfg. Co	15	..
Narragansett Mills	..	5
Pepperell Mfg	77	83
Pilgrim Mills	29	..
Richard Borden Mfg. Co	1	3
Sagamore Mfg. Co	57	..
Shove Mills	1	5
Stafford Mills	..	1
Stevens Mfg. Co	28	..
Union Cotton Mfg. Co	7	..
Wemteaoe Mills	..	1

N. Carolina Mill Stocks

(R. S. Dickson & Co., Charlotte, N. C.)

	Bid	Asked
Acme Spinning Co	60	75
American Yarn & Processing Co	54	65
Chadwick-Hoskins Co. (Par $25)	7	10
Chadwick-Hoskins Co., 8%, pfd	88	95
China Grove Cotton Mills	..	81
Climax Spinning Co	50	61
Clover Mills	..	22
Converse, D. E. Co	..	80
Crescent Spinning Co	46	53
Dixon Mills	88	99
Durham Hosiery, 6%, pfd	20	25
Eagle Yarn Mills	49	61
Efird Mfg. Co	60	66
Erwin Cotton Mills	..	111
Erwin Cotton Mills Co., 6%, pfd	80	93
Flint Mfg. Co	70	86
Flint Mfg. Co., 7%, pfd	..	91
Globe Yarn Mills (N. C.)	..	15
Gray Mfg. Co	..	74
Hanes, P. H. Knitting Co	7	10
Hanes, P. H. Knitting Co., 7%, pfd	85	95
Henrietta Mills, 7%, pfd	35	45
Imperial Yarn Mills	..	60
Linford Mills	58	70
Locke Cotton Mills Co.	35	50
Majestic Mfg. Co	100	115
Mansfield Mills	..	50
Mooresville Cotton Mills	..	4
Mooresville Cotton Mills 7%, prior	..	70
Myers Mills	..	55
Myrtle Mills	..	50
National Yarn Mill	50	60
Perfection Spinning Co	49	58
Ranlo Mfg. Co	..	105
Roanoke Mills	..	60
Rosemary Mfg. Co., pfd., 7½%	90	95
Rowan Cotton Mills Co	55	65
Seminole Cotton Mills Co	..	65
Sterling Spinning Co	50	62
Stowe Spinning Co	49	61
Victory Yarn Mills Co	..	40
Ware Shoals Mfg. Co	110	125
Ware Shoals Mfg. Co., 7%, pfd	85	92
Winget Yarn Mills Co	..	46
Wiscassett Mills Co	150	170

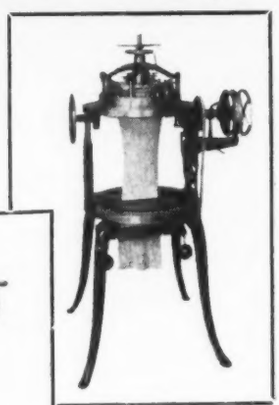
Open Up New Fields of Profit

With BRINTON KNITTING MACHINES

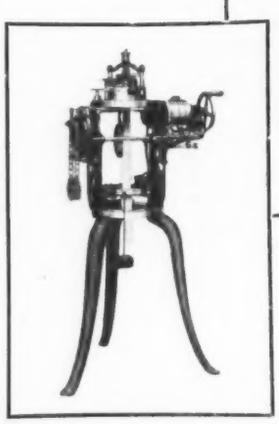
Brinton makes the Knitting Machine you want. Whatever type of merchandise you are making, or are thinking about making, consult one of our engineers and let him help you place the precise machines you need in your mill.

Brinton makes many types of Rib Knitting Machines and Open Top Jersey Knitting Machines in all diameters. Supplement your knowledge with that of Brinton engineers and the Brinton experimental department. These men are called in to solve the problems of mills in every part of the world. Their experience, knowledge and inventive genius is entirely at your disposal.

RIBBERS—of every type.
JERSEY MACHINES—Plain and Fancy stitches.
RIB BODY MACHINES—for underwear and bathing suits.
SWEATER MACHINES—Rib and Jersey Types.
SPECIAL KNITTING MACHINES—from ¼-in. to 36-in.



Plain Rib Body Machine



Single Feed Ribber

H. BRINTON COMPANY
3700 KENSINGTON AVENUE, PHILADELPHIA
New York Office—366 Broadway

CIRCULAR KNITTING MACHINES

BRINTON

of EVERY Kind for EVERY Purpose

Trade to Consider Knitted Underwear Standards at Washington Meeting Feb. 19

PLANS for a general conference of knitted underwear manufacturers to be held in Washington, D. C., Feb. 19, were announced this week. The conference is under the auspices of the Department of Commerce and will be held at the office of the Bureau of Standards; it was called pursuant to a recommendation submitted by the Associated Knit Underwear Manufacturers of America, in an effort to solve the moot problem of underwear standards. The Bureau of Standards has issued a 74-page booklet, giving the proposed specifications and standards in full, and copies of this booklet are being mailed to manufacturers. All persons interested in the production, distribution and use of knitted underwear are invited to attend.

The conference will open at 10 a.m. in room 414 East Building, Bureau of Standards, and the following will speak: Dr. George K. Burgess, director of the Bureau of Standards, who will open the conference; I. J. Fairchild, of the Division of Trade Standards, who will outline procedure for establishment of commercial standards; and Roy A. Cheney, who is secretary of the Associated Knit Underwear Manufacturers of America, who will present the proposed standard. These addresses will be followed by: discussion and adjustment of recommendations, formal action on proposed standards, setting effective date for new production and clearance of existing stocks, and appointment of standing committee.

The proposed commercial standard to be submitted by Mr. Cheney was adopted by his association May 16, 1925 and was revised and supplemented to May 22, 1930. Its purpose is: "to provide standard methods for measurement and also standard measurements for guidance of producers, distributors and users, in order to eliminate confusion resulting from a diversity of measurements and methods and to provide a uniform basis for guaranteeing full size."

Standards are provided for all types of men's, women's and children's knitted underwear apparel. The specifications are generally familiar to TEXTILE WORLD readers, having been published in these columns at various times during their development.

Mercerized Yarn and the "Wear More Cotton" Movement

SOUTHERN women have been urged time and time again to buy and wear more cotton—on the grounds that southern prosperity depends upon an increased consumption of cotton. Except for a period of temporary popularity that is artificially created, the good women continue to wear what is considered "stylish," and silks and rayons retained the dominant position.

The Cotton-Textile Institute has followed the more logical and successful plan of developing styled cottons that have an appeal all their own—not just imitating the more expensive designs exhibited by the silk industry. As a result, cottons have increased in popularity because smart women approve their stylish character for various types of wearing apparel.

Adopting a similar program, the Durene Association of America, is demonstrating the style appeal of garments knitted and woven of Durene yarns. Miss Grace Walton, educational lecturer of that organization, spent this week in Gastonia, N. C., showing a large collection of spring fabrics, hosiery, underwear and outerwear made of Durene—the quality mercerized cotton yarns produced by the seven companies comprising the association.

Miss Walton's visit to Gastonia is part of a definite plan to influence southern retailers to supply their customers with a variety of cotton merchandise, excellently styled and made of high grade yarns. It is particularly fitting that this movement should emanate from Gastonia, the combed yarn center of the South, for it has been estimated that 80% of the yarn produced in Gaston County is consumed by mercerizers.

The teachers and pupils of the Ellen Woodside school, the Sanoma school and the Oaklawn school, three of the largest rural schools of Greenville County, S. C., launched a "wear cotton goods movement" on Jan. 8. The student body and faculty in each instance have agreed to wear cotton dresses and cotton hosiery.

A campaign that is designed to encourage the use of cotton by women in their clothing "from the skin out" is being planned by the Qui Vive club of Huntsville, Ala., an organization of young women.

Don't Be Afraid of The Microscope!

(Continued from page 34)

may, of course, be placed at any desired angle with the direction of the incident beam, where shade and shadow effects are desired. An objective of suitable depth of focus to suit the specimen should be employed. The writer has had good success with objectives as high as 25-mm. focal length for fine lenos and lappet weaves. A 16-mm. objective can also be used for shallower objects.

The procedure will be easily understood. The sample is placed either between or upon the rings, and the tilting axis properly set for good illumination. Tilt the apparatus to one side as far as the mount will permit, and arrange the light to best advantage. Focus the microscope and take the picture as usual. Be sure that the center of the ring is lined up with the axis of the microscope. A central disk carrying a minute spot or prick-punch mark at its center can be lined up with the intersection of cross-hairs in an eyepiece or camera focusing screen. (The latter is, of course, already centered.) Next tilt the mount to the other extreme, being careful not to disturb the setting otherwise, and readjust the focus slightly if necessary. Expose the second plate, and the work of photography is complete. Prints from these two negatives, when suitably mounted on cardboard and viewed through a stereoscope, will give the effect of three-dimensional structures. Bausch & Lomb Optical Co. is perfecting the device, and it is hoped that eventually an inexpensive and thoroughly satisfactory accessory will be available.

(To be continued)

American Bemberg's Complete Price List

A table of new and old prices of American Bemberg Corp., synthetic yarns, published last week inadvertently compared non-parallel lines. To clarify the point, the new Bemberg list is presented complete as follows:

Denier	Filaments	Untwisted Skeins	Untwisted on Spools and Cones	2½ or 5 Turns on Skeins, Spools, Cones Bottle Bobbins
15	24	....	*3.00	....
25	24	....	*2.75	....
30	24	2.40	*2.50	2.60
40	30	2.20	*2.30	2.40
52	30	2.00	2.10	2.20
65	45	1.80	1.90	2.00
80	60	1.60	1.70	1.75
100	75	1.25	1.30	1.35
120	90	1.12	1.17	1.22
150	112	1.00	1.05	1.10
180	135	.87	.92	.97

*15, 25, 30, 40 no twist, on spools only, not on cones.

All prices—unprepared, prepared or 6% oil.

For 15 turn yarn, 5c. per pound added to twisted yarn prices.

Terms—2%, 30 days.

Quantity discounts on annual billings: ½ of 1% on $100,000 to $200,000; 1% on $200,000 to $300,000; 1½% on $300,000 to $400,000; 2% on $400,000 to $500,000; 2½% on $500,000 to $600,000; 3% on $600,000 and over.

F.o.b. plant. Freight allowed to freight station nearest to customer.

Price list subject to change without notice.

Industrial Rayon's New Prices

Following are the new prices of viscose process yarns of Industrial Rayon Corp.:

Den.	Fil.	Bleach Skeins 1st	Bleach Skeins 2nd	Unbleached Cones 1st	Unbleached Cones 2nd
75	18	1.35	1.25	1.40	1.30
100	40	1.10	1.00	1.15	1.05
125	50	1.00	.90	1.05	.95
150	30	.70	.67	.70	.67
150	40	.75	.72	.78	.75
150	60	.85	.82	.88	.85
200	40	.75	.72	.78	.....
300	60	.63	.60	.66	.....
450	60	.63	.60	.66	.....

If your mill can't make a profit with obsolete machines what will be your answer to the inevitable? Will you close your doors or modernize your equipment?

Let us show you how much less expensive the latter course will prove.

TEXTILE MACHINE WORKS
Reading, Pa.

The "READING"
Full-Fashioned Knitting Machine

Cotton Fabric Finishers Elect Officers

The National Association of Finishers of Cotton Fabrics has reelected W. L. Pierce, Bellman Brook Bleachery Co., as its head. D. M. Bates, Cold Spring Bleachery, was elected first vice-president and George L. Sawyer was re-elected secretary treasurer.

Reflecting increased membership and activities in the association from the South, H. R. Stephenson, associated with the Southern Bleachery & Print Works, was elected to a new office, second vice-president.

Other elections were as follows:

Chairman — silk section, Frank J. Wagner, Sunbury Converting Works; rayon section, H. L. Quick, Davis & Quick, Inc.; white goods section, G. D. Harrison, Lewiston Bleach & Dye Works; dyed goods section, P. A. Johnson, the Aspinook Co.; printed goods section, H. B. Thompson, Sr., United States Finishing Co.; southern section, H. R. Stephenson, Southern Bleachery & Print Works.

Members of Executive Committee:

To serve one year—C. E. Murray, Arnold Print Works; B. D. Reigel, Ware Shoals Mfg. Co.

To serve two years—T. Stevenson, the Apponaug Co.; J. G. Bausher, United States Finishing Co.

To serve three years—H. R. Gessner, Millville Mfg. Co.; John Bancroft, Jr., Jos. Bancroft & Sons Co.

To serve four years—H. E. Danner, Bradford Dyeing Assn.; L. S. Little, Slatersville Finishing Co.

Textile Integrity Guild Discusses Night Work

A special meeting of the 18 members of the Advisory Board of the Textile Integrity Guild was held at the Bankers' Club, New York, Thursday, to consider the question of night work in the textile industry as it relates to over-production. The Guild stated that the evils of overproduction and its relation to night work come within the range of activities of the organization, because of the effect of overproduction on the ethics and business practices of textile producers in general. It was stated further that one result of the meeting may be an impartial study and investigation by the Guild of night work in mills in the silk, wool, cotton, rayon and affiliated divisions of the textile industry, especially as it relates to over-production in each branch. If the executive committee should approve the proposed inquiry, representatives of the consuming public would be invited to cooperate.

Recommend 56-58 Inches as Standard Width for Men's Wear

The trade practice committee of the Wool Institute has met and considered the suggestions of manufacturers and distributors relative to the width of men's wear woolen and worsted fabrics made on broad looms.

The committee recommends that a standard width for these fabrics be adopted, and that this standard be 56 to 58 inches.

This recommendation conforms with the present specifications of more than 90% of the mills in the industry.

The questionnaire disclosed that 96.3% of worsted suitings have been sold in this width; 96.4% of woolen suitings in the 56 to 58 in. width; 95.5% of topcoatings and 94% of overcoatings.

Ready for Group Meeting of S. T. A., at Montgomery, Jan. 30

The meeting of the Alabama-Mississippi-Louisiana Division of the Southern Textile Association, scheduled for Jan. 30, as previously noted, will be held at the Chamber of Commerce, Montgomery, Ala., according to an announcement this week from Walter C. Taylor, Charlotte, N. C., secretary of the association. R. J. Jennings, of Lanett, Ala., chairman of the division, will have charge of the program.

Mohair Institute Being Formed

Announcement was made Jan. 17, in Chicago of the formation of a Mohair Institute which will aim to improve the quality of fleeces of American mohair goats and to develop new uses for fabrics of which 100,000,000 yd., were said to be used by the automobile trade, 12,000,000 in railroad coaches besides additional yardage in furniture and other trades. A. C. Gage, formerly secretary of the National Mohair Growers' Association, is one of the organizers.

Arbitration Association Add 30 Retailers to Panel

As a result of the cooperative activities of the National Retail Dry Goods Association and the American Arbitration Association, more than 30 prominent department store executives throughout the country have recently been added to the National Panel of Arbitrators maintained by the latter Association.

Tag System for Circular-Hosiery Mill

(Continued from page 29)

previous pay tells the story. It tells whether one fixer is better than another and whether the fixer is handicapped or helped by having on his machines bad or good knitters. The line tag will answer other questions of like nature. These problems are interrelated, and the tag gives them expression.

There is a tendency to do better work when there is a standard of excellence. The line tag furnishes a standard which is increased whenever passed. Efficiency under this system becomes cumulatively higher.

Cotton Textile Merchants Elect

Association of Cotton Textile Merchants of New York, held its annual meeting, Jan. 20, at the offices of the association, 70 Worth St., New York. Directors to serve three years were elected as follows: William A. Baldwin, Woodward, Baldwin & Co.; Charles D. W. Halsey, Turner, Halsey Co.; George P. Ray, Riverside & Dan River Cotton Mills; Henry C. Taylor, Taylor, Clapp & Beall.

The above directors were elected to succeed Bertram H. Borden, Jacques Bramhall, Magruder Dent and S. Robert Glassford, whose terms expired.

Gerrish H. Milliken, Deering, Milliken & Co., Inc., was elected a director to serve until 1933, filling the unexpired term of Donald B. Stewart, resigned.

In addition to the above the board of directors consists of the following: Walter S. Brewster, Pacific Mills; William W. Cortell, William Whitman Co.; Floyd W. Jefferson, Iselin-Jefferson Co.; William J. Gallon, J. P. Stevens Co.; Leavelle McCampbell, McCampbell & Co., Inc.; Michael R. Reeves, Reeves Bros., Inc.; and George Walcott, of Hunter Mfg. & Commission Co.

It was announced that officers for the ensuing year will be elected by the board at a meeting that will be held in the near future.

About Feb. 1, offices of the association will be moved from the present address to the Merchants Square Bldg., 40 Worth St., New York, where they will occupy rooms numbered 1232, 1233 and 1234.

N. C. Hosiery Men Meet and Hear Report on Depreciation Allowance

Annual reports of committees and the usual election of directors were the principle features of the North Carolina Hosiery Manufacturers Traffic Association's meeting, held in High Point, N. C., Jan. 14. J. E. Millis, of Adams-Millis Corp., president of the association, and Morris Prince, of Greensboro, N. C., secretary, had charge of the program.

Particular attention was devoted to a report that income tax adjustments were being legally sought for the depreciation allowances on knitting machines, and that cases were almost ready for hearing before the internal revenue authorities in Washington, D. C.

Directors elected were, as follows: J. E. Millis and J. J. Corrigan, High Point, N .C.; R. O. Huffman, Morganton, N. C.; L. D. Tucker and R. H. Whitehead, Burlington, N. C.; A. H. Ragan and J. T. Jennings, Thomasville, N. C.; H. I. Sink, Lexington, N. C.; Crawford F. James, Marion, N. C.; H. E. Montsinger, Durham, N. C., and James J. Griffith, Kernersville, N. C.

M. I. T. Establishes Course in Textile Microscopy

Following the December meeting of the faculty, it is announced that the Massachusetts Institute of Technology, Cambridge, Mass., has added to its curriculum a course in textile microscopy. The work will consist of 30 lectures, 30 hours of outside preparation, and 45 hours of laboratory. All lectures will be illustrated with special stereopticon slides and by experiments and apparatus. The laboratory exercises are 15 in number and cover the following subjects:

Handling the textile microscope.
Illumination of the specimen.
Dark-ground and differential illumination.
Mounting of specimens for examination.
Projection drawing with the microscope.
Camera ludica drawing.
Rapid cross sectioning of fiber, yarn, and fabric.
Precision cross sectioning of fibers.
Micrometry of textiles.
Micrometry with special accessories.
Measurement of angles, twist, density, etc.
Fiber identification.
Fabric analysis.
Yarn analysis.
Fiber structure.
Polarized light and the textile microscope (optional).

The course will be given by Professor Edward R. Schwarz and should be of general interest to all those interested or engaged in textile research. Arrangement may also be made to take additional laboratory work of more advanced character simultaneously with or following the above work.

This course is to be included in the special group plan for mill men, announcement of which will be made shortly.

Plans Going Forward for Chemical Show in May

During the week of May 4 to 9, 1931, the Thirteenth Exposition of Chemical Industries will be held at the Grand Central Palace, New York.

It has already been announced that the students' course upon the fundamentals of chemistry and chemical engineering will again be instituted under the chairmanship of Prof. W. T. Read, Dean of Chemistry at Rutgers University, who is a member of the exposition advisory committee.

The exposition will include three floors of exhibits devoted to the raw materials suitable for the manufacture of chemicals and chemical products, various other technical products used in the arts and industries, apparatus and equipment, machinery, and the finished products of the chemical industries.

The machinery and apparatus will vary from laboratory equipment, supplies and instruments, through instruments of precision for recording temperature, pressure, volume, flow, and the many other factors which are brought under control in industrial operations, through the apparatus and equipment in large scale operations, and in many cases whole processes will be shown in operation. There are special fundamental operations utilized in the chemical industries which will be shown in the demonstrations.

The exposition advisory committee is comprised of Dr. A. D. Little, chairman, Raymond F. Bacon, L. H. Baekeland, J. V. N. Dorr, Lammot duPont, Henry B. Faber, Moses Gomberg, William Haynes, Charles H. Herty, H. E. Howe, Louis Kahlenberg, Sidney Kirkpatrick, Fred W. Payne, W. T. Read, L. V. Redman, Charles F. Roth, H. J. Schnell, T. B. Wagner, R. Gordon Walker, David Wesson, M. C. Whitaker, A. H. White, Victor Williams, and is under the direction of the International Exposition Co. with offices in Grand Central Palace, New York, Charles F. Roth, manager.

During the last two years since the last Exposition of Chemical Industries, long strides have been made in the commercialization and use of highly specialized alloys, and exhibits of this group at the Thirteenth Exposition, are sure to command interest and close study.

Boston Wool Receipts

Receipts of domestic and foreign wools at Boston, also imports at Philadelphia and New York for the week ended Jan. 17, based upon data compiled by the Market News Service of the Bureau of Agricultural Economics, Department of Agriculture, follow:

	Week Ended Jan. 17	Total to Date 1931	Total to Date 1930
Domestic	365,000	3,091,000	6,202,000
Foreign	1,718,000	3,980,000	4,494,000
Total	2,083,000	7,071,000	10,696,000
IMPORTS AT PRINCIPAL PORTS			
Boston	1,718,000	3,980,000	4,494,000
Philadelphia	581,000	1,797,000	6,584,000
New York	122,000	2,541,000	4,698,000
Total	2,421,000	8,318,000	15,776,000

Carson Pirie Scott to Sell Glastonbury Underwear

The Glastonbury Knitting Co. and Robert Reis & Co. jointly announced the termination, effective Feb. 1, of their relationship of 48 years during which time Glastonbury underwear was sold exclusively by Robert Reis & Co., in the New York market. Officials of the Glastonbury Mill stated that Carson, Pirie Scott & Co. would hereafter distribute Glastonbury underwear in the Chicago market and that the New York office of Carson, Pirie Scott & Co. will have exclusive Glastonbury distribution in the territory of lower New York, New Jersey, and Connecticut.

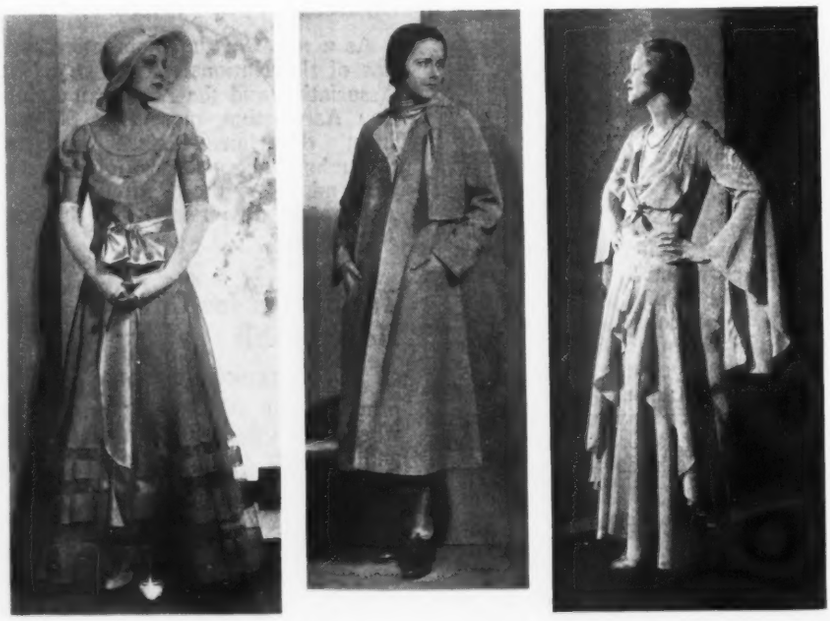
H. N. Slater Elected to Executive Committee, C. T. I.

H. Nelson Slater, president of the Slater Mills, Inc., Webster, Mass., and the Slater (S. C.) Mfg. Co., was elected a member of the Executive Committee of The Cotton-Textile Institute at its meeting in New York, on Thursday evening, Jan. 15. The institute also announced following that meeting that the Dixie Mercerizing Co., Chattanooga, Tenn., and the Tallapoosa (Ga.) Mills, have become members.

Wool Prices Lower in London on Jan. 20

The London wool sales opened Jan. 20, with all wools selling considerably below the prices ruling at the closing of the previous sales in December, according to a cable received by the Bureau of Agricultural Economics from Agricultural Commissioner Foley at London.

Greasy merino wools were mostly 20% under December levels and greasy



Left and Right—Two models made of all-Bemberg fabrics shown at recent style show of Garment Retailers Association in New York. Center—Wool tweed swagger coat shown at Amos Parrish Fashion Clinic in New York

Official label of Knitting Arts Corp. of New York, owner of Rubenstein run-resist patent for knitwear production

crossbreds were 15 to 20% lower. Scoured merinos declined 20 to 30%; scoured Australian crossbreds declined 25%; and scoured New Zealand crossbreds declined 20% compared with the previous sales. Sliped wools also declined with present quotations from 10 to 15% below December.

Chlorine Finds New Use in Treatment of Mill Water

Attention is called to a typographical error which occurred on page 77 of our Jan. 10 issue, wherein it was stated: "In white water which we have coagulated, we have found a pH value of 5.5 to 0.5 most effective for coagulation." This statement is quite erroneous and should read "a pH value of 5.5 to 5.0."

Makes Plush with Less Warps than Previously

A basic patent, No. 1,778,196, has just been issued by the United States Patent Office, covering the manufacture of the automobile plush. A statement issued recently at Boston to stockholders by Frank B. Hopewell, treasurer of Sanford Mills, Manufacturers of Chase Velmo mohair, announced that this patent had been acquired by that company. This invention concerns the manufacture of a high grade pile fabric with less warps than heretofore necessary.

Operates Plant on New Water-Repellent Finish

Hydropel Process Co., a Massachusetts corporation controlling the United States and Canadian rights to a water repellent process developed in England, and special machinery for application, has started operation in a plant located in Jewett City, Conn. Considerable interest has been aroused in the process which is described as rendering materials water repellent and, at the same time, leaving them porous and with the fashion features of the fabric unimpaired. Practically all types of woven fabrics can be processed, whether they be of cotton, silk, wool or rayon. The processed fabrics may be dry-cleaned and washed in the ordinary way without affecting the water resisting qualities, it is said.

Since the new process is not a surface coating it is claimed that it will have application in suitings, overcoatings and dress materials as the warmth of the material is not increased nor the appearance altered. In fine silks and velvets the process will prevent spotting from water. The proofing of canvas for tents, awnings, etc., is said to represent a wide field as mildew is prevented.

The capacity of the plant at Jewett City is estimated at 6,000,000 yds. per year. Plans have been made for a unit at Toledo, Ohio, and two additional units later. Officers of the Hydropel Process Co. are: J. Andrew Heath, president; William Macauley, vice president; William N. Gibson, vice president; Welcome J. Billington, treasurer.

Bodmer New President of Silk Dyers Association

Edward Bodmer, of Paterson Silk Dyeing Co., was elected president of the Silk Dyers Association of America at its annual meeting in the Alexander Hotel, Paterson, N. J., succeeding P. J. Wood, head of Oriental Silk Printing Co. who served the past year.

M. Emile Rotheli, of the Weidmann plant of United Piece Dye Works, was elected vice-president, and Eli Mirandon, of Lanza Silk Dyeing Co. was re-elected secretary and treasurer.

Hosiery-Underwear Association Asks Higher Depreciation Rate

The National Association of Hosiery & Underwear Manufacturers, at the quarterly meeting of its board of directors held in New York this week, approved a proposal that effort be made to persuade the Bureau of Internal Revenue to allow an upward revision of depreciation rates on hosiery and underwear machines.

Piedmont Chemists Meet at Greensboro, Jan. 31

The winter meeting of the Piedmont Section of American Association of Textile Chemists and Colorists will be held at the O. Henry Hotel, Greensboro, N. C., Saturday, Jan. 31, according to an announcement from Arthur R. Thompson, Jr., secretary, Charlotte, N. C. A technical program with entertainment has been arranged beginning at 6:45 p.m.

Prices of Acele Unchanged, DuPont Announces

Prices of "Acele" cellulose acetate process yarn are to remain at their present levels, according to an announcement by the DuPont Rayon Co. This statement was made to eliminate uncertainty as regards future prices of this yarn.

Bossong Moves N. Y. Office

J. C. Bossong & Co., sales agents for Asheboro Hosiery Mills, Asheboro, N. C., and Johnson City Mills, Johnson City, Tenn., have moved their New York office from 88 Franklin St., to 271 Church St.

Bemberg Closes Providence Office; To Sell Through N. Y.

With the aim of bringing New England mills in more direct contact with the New York office, the American Bemberg Corp. has transferred activities of the Providence office to New York headquarters.

Business News

Chicago Pump Co. Names Two Representatives

The appointment of R. K. Rothrock, of New Orleans, La., to represent the Chicago Pump Co., makers of textile and other equipment, in the New Orleans territory, has been announced. J. M. Mac Crea, Syracuse, N. Y., will represent the company in the Syracuse territory.

W. J. McGeough Rejoins U S Bobbin & Shuttle

William J. McGeough is again associated with the U S Bobbin & Shuttle Co., of Manchester, N. H., and has been appointed to the sales department of the company. Mr. McGeough, who previously was with this company for many years, has a thorough knowledge of bobbin, spool and shuttle requirements gained from long experience in both the manufacture and distribution of U S Bobbin products. He will represent the company in New Bedford and surrounding territory.

Greenville Spindle Merges With Southeastern Machine Co.

The Southeastern Machine Co. of Atlanta, Ga., and the Greenville Spindle & Flyer Co., Greenville, S. C., recently merged and is now operated under the firm name of the Southeastern Machine Co., with George F. Andrews as president, it is announced. The Greenville plant, in order to take care of the increasing business of general overhauling of textile machinery, will be enlarged.

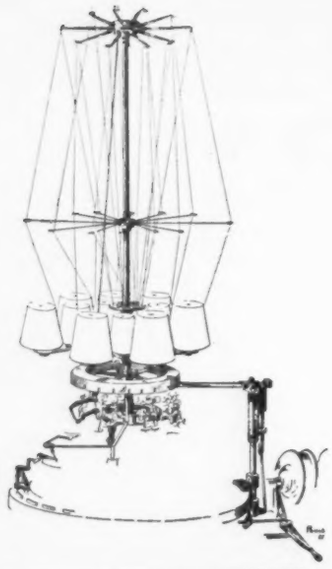
New Hercules Laboratories Nearly Ready

New experimental laboratories, costing more than $500,000, which will house the research facilities of the Hercules Powder Co., at Wilmington, Del., are nearing completion. The main laboratory building and a number of smaller units have been finished and are awaiting installation of equipment. The principal products of this company, nitrocellulose, cotton linter pulp, naval stores, and explosives, have all been developed for more widespread industrial, including textile, use through research activity.

Westinghouse Appoints Engineering Executives

Several appointments of importance have been announced by the Westinghouse Electric and Manufacturing Co., East Pittsburgh, Pa. Thomas S. Perkins, formerly manager of supply engineering and consulting engineer, is now general manager of distribution engineering and will represent S. M. Kintner, assistant vice-president, in his work with several departments. Mr. Perkins has been with the Westinghouse company since his graduation from the Worcester Technical Institute in 1893.

R. W. Owens, manager of industrial motor engineering, has been made general manager of industrial engineering. W. M. McConahey is appointed consulting engineer, with headquarters in the transformer engineering department of the Sharon works. H. V. Putman succeeds Mr. McConahey as manager of the transformer engineering department. M. S. Hancock is appointed assistant manager of the industrial motor engineering department and R. E. Marbury is made assistant manager of the supply engineering department.



Improves Knitted Products—Increases Daily Output

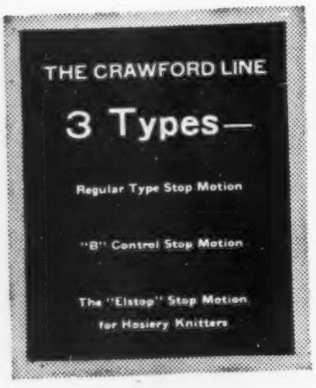
The new Crawford Type "B" Control Stop Motion instantly stops any knitting machine if the yarn breaks or loose ends, knots, slubs, catches on the bobbins or other trouble appears.

It will prevent holes, press-offs and other defects.

Widely used on machines knitting silk and cotton underwear, sweaters, scarfs, etc.

Will stop needle breakage. Easily adjustable to any range of yarn.

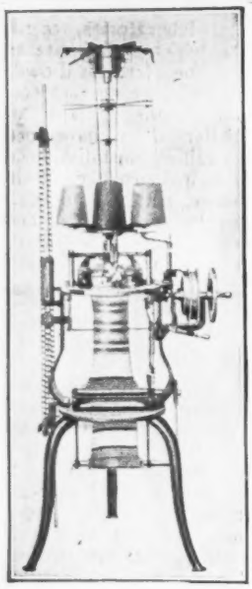
Let us demonstrate the efficiency of the new Crawford Type "B" Control Stop Motion in your mill. Ask for full information.



THE CRAWFORD MANUFACTURING COMPANY
NEW BRUNSWICK, N. J.

—See also—
CONSOLIDATED TEXTILE
CATALOG

CRAWFORD STOP MOTIONS



Let a Crane man give you vital performance facts . . . Write.

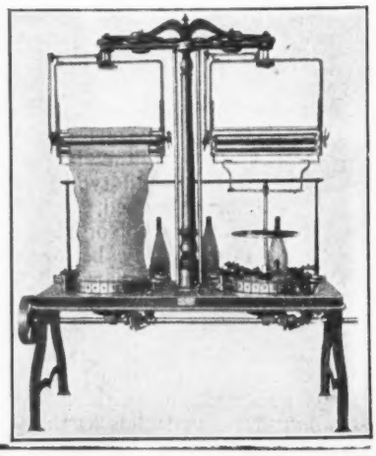
You're ready to produce new patterns if you're running Crane Machines . . . Keep up with changing styles and Keep ahead of competition with Cranes

Improved Automatic 3-Colored Plain Stripes

Made in sizes from 7⅞ in. to 20⅝ in. inclusive, of any desired gauge. These measurements are back to back of cylinder needles. Knit fabrics for bathing suits, theatricals, athletic goods. Ranks high in the favor of mill men. The Crawford stop motion is applied when requested.

Spring Needle Underwear Machine with Automatic Take-up

Made in sizes from 13 in. to 26 in. in diameter of any desired gauge, the number of feeds depending on the size of cylinders. Also built in sizes from 10 in. to 32 in. in diameter for the production of a great variety of fabrics. Aside from the feeds for plain fabrics, the stockinet, eiderdown and astrachan feeds are superior to any on the market.



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Lakeport, N. H.

CRANE *Spring and Latch* NEEDLE KNITTING MACHINERY